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ORIGINAL LECTURES.

THE PATH OF MOTOR AND SENSORY REINFORCEMENT.

Abstract of a Clinical Lecture delivered at the Infirmary for Nervous Diseases of the Orthopædic Hospital.

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[Reported by GUY HINSDALE, M.D., Assistant Physician to the Hospital.]

SINCE the discovery, by Dr. Morris J. Lewis and myself, of sensory reinforcements, and our amplification of Jendrássik's discovery of motor reinforcements, I have been on the watch for chances of studying the tracks followed by the impulses aroused by these agencies. Opportunities for useful examinations of the tracks of reinforcements are, of necessity, rare, and, perhaps, some may have been neglected, because neurologists, as yet, have hardly realized the importance of this new means of examining the state of the muscle-reflexes. Moreover, until it is surely made clear as to whether reinforcements are explicable by, or due to, "overflow," or to releases from inhibitory controls, all distinct applicatory explanation becomes difficult. Facts must accumulate, and we must look largely to the laboratory for a solution of much that is yet obscure. Every use, however, has not been made of clinical chances, and I shall, in closing, point out what these are.

The case here presented is a contribution to the symptomatic study of reinforcements and of some minor points in a case of spastic paraplegia, in which both spasm and palsy are perfectly represented. The case seems to me so important that I give it in unusual detail, as follows:

Mrs. C., American, aged thirty-seven. Family history: Her father is living and has chronic rheumatism quite severely; mother living and in good health; all other family history is negative.

Personal history: She was married at the age of twenty-eight; her husband is still alive and has never had syphilis. She began to menstruate at the age of fourteen, but has been irregular, often menstruating at periods of three weeks and in excessive amounts.

She has had but one child, which had to be delivered by instruments at the end of a labor of eighteen hours' duration. This child was weak and puny, and was nursed at the breast until two years old. It has since died at the age of five years. Mrs. C. has had the usual diseases of childhood, and typhoid fever when quite young.

Three years ago she was thrown from a horse, sustaining no special injury, and had no sequence except the soreness consequent upon the fall. She has been occupied by housekeeping duties, and was much out of doors.

On the second right upper incisor there is a very faint blue appearance in the gum. On the opposite side of the lower jaw there is a similar appearance, but still more doubtful. The water-supply of the town in which she lives comes from the mountains and is stored in cisterns. She says there is no lead in any way connected with this water-supply, nor does she know of any means by which lead could have been taken into the system. There was none found in the urine. Her duties bear no relation to her present indisposition. Her habits are all good. The date of her present trouble is indefinite, but, so far as she knows, it was nine and one-half years ago that, in consequence of feeling awkward as to motion, it became unusually difficult for her to walk a straight line.

Eleven years ago the right leg was, for a time, slightly numb, and for this she received electrical treatment and made a fair recovery.

Seven years ago she had a burning pain in the lower part of the back. Before the onset of this pain she could go about, but only to a limited extent, and she was then confined to her bed for four months. On getting up again she could not walk at all, except with assistance. During this period there was no pain in the legs.

Five years ago she had two congestive chills in no way affecting the condition of the legs.

Three years ago, under the scapula and in other portions of her back, she had a sensation as though a boil were present.

A year or so ago, slight sciatic pains were present at times, with a like pain posterior to the inner malleolus.

During the summer of 1888, she had an attack of severe shooting pains around the thigh and along the sciatics. She then had hyperæsthesia of the skin and had the leg protected by down pillows, so painful was every touch. This spell lasted one week. When attempting to walk, her feet seemed to stick to the floor. She could not walk at all in the dark, and she had a sensation as though she must watch every step; but this sensation has gone. Numbness is not a prominent symptom, only occurring after the leg has been hanging for a time. For the last year she has not been able to walk, and has now lost all power of leg motion when lying down, being then unable to stir any part of the lower limbs. A year ago she was better at times, but the improvement lasted only for short periods. The disease showed throughout a gradual increase.

Present condition: The hair is brown, the skin dark, and shows no signs of eruption. The legs are slightly œdematous. The teeth are good, with no changes except the suspicious blue line as above noticed. The tongue presents a light coat, though this is not always present. Appetite is good; digestion is fairly natural. The bowels are regular. Rectum not examined. Lungs normal. Pulse is regular, 64 per minute; not very full. Arterial tension not increased. Blood not examined. There are no evidences of disease in the abdominal organs.

The only clinical symptom present of gynecological importance is too frequent occurrence of menstruation—once in three weeks. The uterus is slightly enlarged, movable, and in good position. No trouble in either broad ligament, and the cervix is quite healthy, with the exception of some few granulations. The uterus is of lax fibre.

Nervous system: Her general intelligence is good. She sleeps well. Her strength is good above the waist. She has a lack of complete control of the bladder, and the urine will sometimes come away suddenly; occasionally there is some dribbling, and the tendency to sudden discharges applies to the rectum also. She has no vertigo, but her station is not good; she cannot stand alone. She cannot walk forward at all, nor can she move a muscle, from the hips down, in either leg. When standing she can move the thighs a little with the psoas muscles. She can walk backward a few steps with full assistance. Her legs are fat and apparently in good condition. The feet are cold now, but sometimes they are warmer. Occasionally tremors occur, which are coarse and rapid and confined to the legs. They first appeared in the right leg five years ago.

Reflexes: Sole +. Epigastric reflex is present.

Tendon- and muscle-jerk: A blow upon the patellar tendon, when the leg is in a semiflexed position, causes markedly increased jerk and so-called spinal epilepsy. Bending the ankle abruptly causes no paradoxical contraction. Bending of either big toe causes contraction of the ankle and of the quadriceps extensor femoris above. At the ankle there is clonus on the slightest flexion. Pricking of the skin of the leg causes immediate reflex motion. Clonus can be had at each knee, with the leg in extension, by pulling at the patella; but it cannot be had when the leg is bent, there being apparently too much tension of the muscles. When the leg rests across a support at the knee, it fails to drop at once, and, on attempting to bend it, is found to present perfectly the "lead-pipe condition;" and, after being held for a time in extension, it slowly falls. Having the knee slightly bent and making the slightest blow with the hammer on the patella, so that no response is obtained, a marked response is obtained by clutching the hands. Both right- and left-hand contractions give this reinforcement, and, likewise, contraction of the muscles of the face. Both Dr. Lewis and myself satisfied ourselves separately as to this point.

No reinforcement can be had by pain, or cold, or heat, applied to the legs or arms. The leg muscles react under the blow of a hammer excessively and very rapidly above and below the knee, and with no local humping. A blow on the gluteal muscles causes violent thigh clonus. Paralysis of the legs is complete. There is no pain present, but on making abrupt extensions pain is marked; and on thus extending the left leg, there is a sharp pain on the outer part of the right thigh.

Touch and localization seem perfect on each side, though the patient thinks that they are rather less perfect on the left side. The sense of pain is normal. There is some confusion in the feet as to temperatures; she distinguishes heat easily, but sometimes mistakes cold for heat. There are no subjective sensations, and no trophic alterations, save slight œdema. There are no hallucinations and no hysterical symptoms whatever. She has no headache. She thinks there is some soreness over the nerve trunks below the knee on deep pressure.

The examination of the eyes by Dr. de Schweinitz is as follows: Pupils act normally; external muscles normal, except some slight insufficiency of internal recti; fundus of each eye normal; only slight retinal haze around edges of the disk. Patient has no asthenopia.

The ears show no changes. The urine is acid and of high color, specific gravity 1031; no albumin; no sugar. Microscopic examination shows a few pus cells, vaginal epithelium, and large crystals of uric acid, which are not very abundant.

All the electrical reactions are normal, and electricity causes no spastic reactions, unless the current is most excessive.

The preceding attacks of pain, numbness, etc., might excite suspicion as to hysterical tendencies, but there were no further, and, indeed, no distinct evidences, and I have rarely seen anyone more free from the obvious personal peculiarities characteristic of hysteria. Her spinal system, however, seems to have been sensitive, and, at last, comes a complete history of lateral sclerosis, with involvement of the direct anterior columns to an extreme degree. We have entire paralysis from the groin downward; excessive spastic conditions; perfect sensation in all forms; no more bladder trouble than some spasticity may cause. The knee-jerk is, of course, in excess. If we excite it feebly, voluntary acts of either hand, or of the face, increase it; therefore, the channels by which reinforcements attain to the ganglia involved are open—not so freely as usual, but distinctly enough. The volitional force cannot reach these centres; the reinforcements can. If we admit "overflow," involuntary tracks are still open to this. Or, if we say with some that a voluntary act releases the concerned spinal ganglia from superior control, the tracks of such influential control must still be open. The problem does not gain in clearness, and I must admit escape of some one band of fibres from the ruin which seems to have fallen on the mass of anterior and lateral fibres.

Not less puzzling is it, in any theoretic point of view, that the sensory reinforcements fail where the motor remain. If we seek explanation of reinforcements in overflow, we must, of course, presume that sensory reinforcement-overflows are somewhere arrested on their way to the motor reflex spinal centres; or, if we insist on the inhibition view, the inhibitions due to sensory impressions must be cut off, so that it is fair to infer that they are nowhere above the level of the said ganglions switched on to motor tracks.

I pointed out in a lecture last spring that in a case of Professor Osler's, of broken back, there was no knee-jerk and no volitional control of the quadriceps, and yet that I could, at least, evolve slight knee-jerk during violent clenching of the hands, and coincident grimace. The will-channel was shut, the reinforcement-channel open.

It has always struck me as most strange that electric movement of muscles was non-reinforcible, and this seemed to me a proof that electrical influence is the most local of all stimulants to muscles. And of this there are other proofs, and none better than the fact that while in these spastic cases a pinch, a pin-prick, almost a mere

touch, arouses reflex action, considerable electric irritation may fail to do so.

My friend and colleague, Dr. Morris Lewis, has kindly furnished me with the following notes of a case under his care at the Children's Hospital. In this instance, a child, aged seven years, was completely paralyzed as to motion, and partly so as to sensation, but the knee-jerk was reinforced by a grimace or clenching the hands, and also by a pin-prick on the face or hands.

Rose C., aged seven years. Her father had syphilis, but there was no history of phthisis. Previous to her illness Rose had had whooping-cough, croup, measles, and chicken-pox. She seemed perfectly well until June, 1889, when a "hump" was noticed high up in her back. Last July she had a fall, which weakened her back for awhile, but she soon recovered, and played around with other children. On October 2d she had a second fall, which completely disabled her, and she was put to bed. Paralysis of the legs, bladder, and rectum came on immediately after the fall. A fortnight later a bad cough developed, which was worse at night; breathing was rapid and noisy. On October 30th she was admitted to the hospital. Her pulse was 140, and temperature 99°. She had had two convulsions two days previously.

Five days later her general condition was much improved. There was slight knee-jerk present in both legs reinforced by a grimace, clenching the hands, and by a pin-prick. No ankle-clonus. Area of acute sensation above a line drawn around the body about three inches above the umbilicus.

When seen November 3d, the child was breathing entirely with the diaphragm, the respiratory muscles appearing to be completely paralyzed. The lower portion of the chest-walls sank with each respiration, as did also the intercostal spaces.

Ten days after admission knee-jerk was obtained in the right leg after a few trials, though not in the first attempts, reinforced by sensory and voluntary motion. Ankle-clonus absent in both, though obtainable two days previously when the temperature was two degrees lower, viz., 98.4°. The lungs had then cleared, excepting for a few large râles. No dulness anywhere.

There were two decided prominences in the upper dorsal spine apparently belonging to the first and second dorsal vertebræ. Immediately below this prominence there was a lateral curve with convexity to the right. The skin over the prominence was intensely sensitive to heat, more so than the skin elsewhere.

The treatment adopted by Dr. Lewis was at first the use of carbonate of ammonium and digitalis, followed by cod-liver oil and syrup of iodide of iron. Extension in bed was employed; a three-pound weight was attached to a pulley at the foot of the bed, which was slightly elevated. Attempts at extension in the upright position failed, because of the distress to the patient. Now, however, six pounds twice a day for five minutes can be borne, and although sensation has improved immensely and she localizes well, there is no return of motion. Knee-jerk is obtainable with difficulty, and there is reinforcement, though feeble; it is best in left leg. But it is sufficient proof that, though the will-channel is shut, a reinforcement-channel is open, and a pathway of hope for an ultimate cure.

I wish to call your attention to the points of resemblance and of difference in these two cases. In both sensation in the affected limbs is good. In both the will-channel is closed. In the first, motor reinforcement is possible, while sensation failed. In the last case the way for sensory and motor reinforcements is open.

Despite the fact that it is impossible in these cases to say exactly through what tracks reinforcements pass to reach the concerned centres, I am glad to mention such facts as we do know, trusting that other physicians may be more fortunate in seeing cases which will enable them to ascertain with exactness the facts we now desire—that is, the true paths followed by motor and sensory reinforcements.

I have long sought for cases of crushed spine to see if, in absolute isolation of spinal centres, it be possible to obtain by heat or cold mechanically used below the injury any reinforcement of the knee- or ankle-jerk. The chances to see these cases usually fall only to general hospital surgeons, and of late no instance of this accident has been within my reach.

ORIGINAL ARTICLES.

REFLEX NEUROSES.[1]

BY M. ALLEN STARR, M.D., PH.D.,
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THE active part of the nervous system is the gray matter. The white fibres merely carry impulses to and from it. This gray matter is collected into three quite distinct masses: (1) the spinal and medullary centres—*i. e.*, those from which the spinal and cranial nerves arise; (2) the basal ganglia; (3) the cortex. In the entire vertebrate species it is possible to assign to these distinct masses different functions: to the spinal and medullary centres reflex action, to the basal ganglia automatic action, to the cortex conscious and voluntary action. In dealing with reflex disturbance it would, therefore, at first appear that we were to be limited in our discussion to affections of the spinal cord and medullary centres. These must certainly be considered. Yet we are not thus limited. For each lower system is under constant control from the one above it; hence the spinal (reflex) activity being the lowest is dominated both by the basal (automatic) activity and by the cortical (voluntary) activity. Hence, disturbances of reflex action may be brought about by anything which either increases the normal inhibitory action of the higher centres or removes that action, as well as by disease of these reflex centres themselves. A prompt motor response to a sensory stimulus is the action which should normally take place when the reflex centres are called into play. Sneezing, winking, swallowing, coughing, the secretion of alkaline saliva in the mouth, and acid gastric juice in the

[1] Read at the New York Academy of Medicine, March 20, 1890.

stomach, when any foreign body is put into these cavities, the act of vomiting when that body is an active irritant, or of increased peristalsis of the intestines if the foreign substance reaches it; the flushing of the skin with blood when exposed to changes of temperature, the regular respiratory and cardiac movements, and the vascular tone; these as well as the so-called tendon and skin reflexes are examples of reflex activity. Without such reflex action the balance of supply and demand in the human economy would be impossible and life itself would cease. A power of quick and appropriate response to normal or abnormal irritation is a natural power of the lowest masses of gray matter. I cannot find any evidence from the study of disease that the exercise of this power is in any way detrimental. This power may be interfered with in several ways. Strychnine and its coefficient drugs will increase it. The result is manifest (1) by an unnaturally strong response to a weak irritation; (2) by an abnormally long and continued response to ordinary irritation. The spasms on slight touch and the opisthotonos with rigidity in a guinea-pig poisoned by strychnine are examples of both. In man tetanus furnishes a good illustration; but the extraordinary state of nervous irritation, the starting and jumping at little noises, the flushing on slightest irritation, the cramps produced by heat, the extreme uneasiness and hyperæsthesia present in spinal meningitis are equally good examples of increased reflex activity due to direct irritation. Reflex activity may be suspended by violent and sudden irritation. Injuries to the abdomen or head may arrest all reflex activity and cause death in man as well as in a frog, as described by Goltz. It may be impaired by an excess of moderate irritations coming simultaneously. Just as the conscious attention cannot be given at one time to several subjects and elicit simultaneously appropriate responses to all, so reflex centres may be embarrassed by numerous simultaneous stimuli and fail to react to any one in proper degree. The condition subsequent to severe traumatic concussion is an illustration.

When we seek for illustrations of either increased or decreased reflex excitability from spinal disease it is evident that we must allude to very serious diseases. The reflex mechanism is too important and too stabile to be affected by little irritants, or by slight causes. If it were not, the numerous, inevitable stimuli consequent upon an active life would constantly put that life in danger. How few of the severe accidents which constantly occur really affect in any marked degree the reflex nervous system? How many serious irritations, traumatic, painful, distressing, fail to cause a single spinal nervous symptom? The surgical wards of a hospital offer little field for the observation of reflex nervous disturbance—happily for the inmates. In the lower animals such affections rarely exist.

Turning now to the other cause of disturbance of reflex function, defective control by higher centres, we at once enter upon a broader field. Arrest of reflex activity is rare and needs little consideration. It may be produced voluntarily, as one may prevent the knee-jerk by intention, or inhibit the act of swallowing, as in hysterical dysphagia. It may be produced involuntarily, as when cerebral hæmorrhage inhibits respiratory or cardiac action; or extreme fright causes death in the same way. Increase of reflex activity from central causes is common. The act of control must be constantly exerted in order to preserve the balance of power and the proper harmony of action in the nervous system. Whether we start from a consideration of moral conduct or of the plantar reflex we reach the same conclusion. And in central control a slight defect produces widespread and serious results. A man who has once abused a confidence will not be implicitly trusted, though he lives for a hundred years. A small clot in the brain will set all the motor, vasomotor, and sympathetic centres in such a state of instability as to impair all confidence in their action. A hemiplegic who has apparently recovered still has the increased knee-jerk. This may not in any way impede the action of the reflex centres. That is carried on exactly, accurately, satisfactorily, and its action does no harm. The emptying of the bladder as soon as it is full is a perfectly normal, satisfactory act on the part of the lumbar spinal cord, and active incontinence of urine is not a symptom that it is diseased. It is a symptom that impulses calculated to restrain the act till an appropriate time and place offers are prevented from reaching that normal reflex centre. There must be a proper harmony and succession of reflex acts with some definite order for the nervous system to fulfil its whole duty. And any defect in that order may cause effects which in other conditions would not be defects.

If these patent facts of physiology be accepted, I think we must conclude that in those diseases known as reflex neuroses, in which there is no real defect in reflex action, but only an undue or inharmonious reflex activity, the actual origin of the disease must be either in an excess of activity in the lower centres or a defect of control in the higher centres. As we have seen, an excess of activity is commonly called forth only by very severe causes; while a defective control may come from slight ones. Phenomena comparable to tetanus or strychnine poisoning are rarely, if ever, seen in reflex neuroses. In the various reflex neuroses in which peripheral irritation is the supposed cause of disease, it is my opinion that when peripheral irritation is the actual cause, nature indicates it by attracting attention to the seat of irrita-

tion by discomfort or by pain.[1] And when, as in very many cases, the source of the irritation is by no means evident, is only found, or supposedly found, by extraordinary effort, the probability is largely in favor of the assumption that the reflex neurosis is not produced by any direct peripheral irritation, but is the manifestation of a slight or serious defect of control by higher centres due to their impaired nutrition and consequent impaired activity.

Theories are attractive, but misleading. Experience is a better guide. In my own experience I am sure that a very large majority of the patients who present symptoms of reflex neuroses have been exposed to influences which undermine the strength and nutrition of the *entire* nervous system, have serious symptoms, not only of a so-called reflex character, but of defective central control; are to be regarded as suffering from functional or organic disease of the highest, most complex, most highly developed portion of the nervous system; and are not merely the victims of irritation in some peripheral organ.

We know that long since the notion of a reflex paralysis—such, for example, as a general paraplegia from a slight wound of the hand—has been abandoned, and these cases are to-day explained more satisfactorily upon the theory of mental shock rather than spinal irritation.[2] That they are rare, must be conceded. Two surgeons of this city, of the largest experience, have told me that they have never seen a case. We are coming rapidly to the notion that the symptoms in the so-called condition of spinal concussion are really due to the same state of mental shock. The highest, most delicate, most easily affected centres of the nervous system, those which are the last to arise in the process of evolution are, as Hughlings-Jackson has pointed out, the first to fail in dissolution, are the easiest affected by sudden and unexpected mental irritation. How else can we explain the fact that, in a railway accident, passengers who are asleep rarely suffer from after-effects? Passengers who are awake suffer the immediate alarm and the subsequent symptoms.

The phenomena of hypnotic suggestion have proved conclusively that many so-called spinal neuroses are really due to defective cerebral control. It is not necessary to call such defect hysteria. Mental shock and mental worry may produce such an unstable state of the highest centres that their inhibitory action is removed, allowing lower centres to manifest unusual activity. In such cases, then, the actual manifestation may perhaps be in a lower centre, but the actual seat of disease is not necessarily there. It is in the higher centre, which controls the lower.

Let us take, for example, a case of so-called uterine reflex neurosis. The irritation from the organ reaches the lower spinal cord. If its centres are really excited to activity, we should expect such symptoms as occur in a spinal meningitis, viz.: hyperæsthesia of the legs and cramps and spasms of the calves, vesical and rectal tenesmus, and active incontinence of urine. But these are not the symptoms found. You do find pain and a dragging sensation in the back. This does not cause any manifestation of true spinal reflex activity. There is no evidence of such activity. It does produce a wearing discomfort, appreciated consciously; received, then, in the highest cerebral centres; exhausting them, and impairing their control over the lower, especially the vaso-motor, centres. Hence the headaches, general nervousness, flushings, feelings of heat, etc., symptoms of general instability of the lower centres, *not* of the lumbar cord centres themselves in particular.[1] It is a mistake to call this a reflex neurosis. It is a general nervous exhaustion, due to a peripheral pain. The actual spinal reflex centres have no part at all, or very little part, if any, in the complex of symptoms.

I think the same is true—*mutatis mutandis*—of eye-strain. Let an eye be actually strained by defective vision, defective accommodation, or muscular asthenopia, and the result is increased winking, watering of the eye, feeling of inability to use it, pain, heavy eyelids, possibly conjunctival hyperæmia; and in an animal under strychnine, nystagmus, or twitching of the ocular muscles—a phenomenon rarely seen in man—never seen, in my experience from the so-called strain of the ocular muscles. Every other muscle in the body, if much over-strained, will become irritable; the knee-jerk can be increased by exercise; the biceps twitches spontaneously after a weight is raised. Who has not felt the tremor of an over-strained set of muscles? Why is it that, in eye-strain of the external ocular muscles, nystagmus is never seen? A serious strain of the intra-ocular tension—such as occurs in astigmatism and hypermetropia—gives rise to discomfort, to voluntary effort to strain the eyes in using, to effects, in other words, upon *not* the centres governing ocular motion, but upon the conscious voluntary centres of the cortex, upon the centres of highest evolution, most delicate, most susceptible to slight effects. The result is cortical exhaustion, similar exactly to that produced by uterine or ovarian pain, or by pain anywhere, or by mental shock or mental worry.

Take, lastly, the so-called reflex convulsions from genital irritation in boys—due to phimosis, or concretions behind the prepuce, or to masturbation.

[1] See Medical Record, January 1, 1890.

[2] Leyden: Reflex Lahmung, Volkmann's Klin. Vorträge, No. 1

[1] Goodell: The Abuse of Uterine Treatment. THE MEDICAL NEWS, December 7, 1889.

Such convulsions occur only in neurotic children. They are always preceded by mental irritability, they never occur without some evidence of cerebral irritation. It is rarely that any such evidence of spinal irritation, as frequent micturition, or cramps in the calves of the legs, attends them. The irritation, then, is acting upon the entire nervous system. The weakest part yields first. That part is the part which controls the other parts. The child is not suffering from reflex irritation. Irritation at the periphery is the cause only in part; a weak nervous system is the potent predisposing cause. And, unless this be strengthened at the same time that the peripheral irritation is removed, there will be a recurrence of the symptoms from some other apparently trivial cause, and he who treats these will never cure the patient. The same thing is true of genital irritation in adults. Spermatorrhœa, seminal emissions, atrophy of the testicles, exist unnoticed in many persons until attention is called to them, the mind dwells on them, the higher conscious emotional nervous system is irritated by worry, and then the symptoms of so-called sexual or spinal neurasthenia develop. The trouble is *not* spinal, is *not* reflex, it is cortical. Thus physiological investigation and careful clinical study combine to prove that while peripheral irritation may produce nervous symptoms, it is not directly through the lower centres, it is not by exciting reflex action. It is rather by producing exhaustion of the highest conscious centres which control the entire nervous mechanism. The largest engine is governed by a very small steam crank. A little motion of that will produce very great motion elsewhere. If the engine is whirling itself to destruction, do not attempt to stop the flywheel, do not catch hold of the binding straps, but turn off the steam by the little crank.

In any case of so-called reflex neurosis do not be satisfied by merely removing supposed peripheral irritation, but increase the nutrition of the entire system, give it food and drink, strengthen it by every possible means, baths, exercise, rest; regular, not hurried work in many directions, not in one only; and by tonics, to enable it to exert all its powers of control, and the peripheral effects will disappear of their own accord.

In the presence of a case of neurasthenia with peripheral symptoms, of chorea, or epilepsy, or hysteria, with sources of peripheral irritation present, go back of the apparently important symptoms to those of real causal moment, and the therapeutic results will be more satisfactory and more enduring.

ELECTRICITY IN CHRONIC PELVIC INFLAMMATORY DISEASES.[1]

BY J. M. BALDY, M.D.,
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IT is now some years since Apostoli began to treat inflammatory diseases of the pelvis with electricity. At first under the influence of the older pathology, or, more correctly, lack of pathology, he called these troubles *phlegmon*, *peri-metritis*, *para-metritis*, *cellulitis*, and by other familiar misnomers.

To-day he recognizes these same diseases under more correct names, and says he shall speak no more of peri-metritis, but of salpingo-ovaritis, whether complicating a pelvic peritonitis or not. In order that we may be sure that we are not discussing one condition of pelvic disease and Apostoli another, it may be well in the beginning to make ourselves perfectly clear on this subject. In the *Journal of the American Medical Association*, July 27, 1889, Apostoli says:

"Every salpingo-ovaritis will generally be suitable for the appropriate electrical treatment, and this should be the conservative method of choice; it is sovereign in catarrhal salpingitis, only calmative in tubercular salpingo-ovaritis, and in certain pus tubes may be of great service."

The only variety of salpingo-ovaritis I here wish to discuss is that which I presume he intends his catarrhal salpingitis to represent, for the reason that a pus tube, with the pus drained away, practically resolves itself into an advanced stage of this variety, and, therefore, need not be separately considered. A typical picture of the pathological condition (brought about in several ways) which I have in mind, is as follows: The Fallopian tube thickened and enlarged to two, three, or four times its natural size by inflammatory changes, the tubes cheesy or not as circumstances determine; the fimbriated end destroyed, all traces of the fimbria having disappeared, and a rounded smooth surface presenting in their place, most often with the ovary adherent to it; the ovary and tube displaced to a greater or less degree, generally and firmly adherent; as a rule, the tube is empty. With this condition the patient will present a history of sterility, pain, and general ill-health. A local examination will show, often only to an experienced finger, an enlarged tube going off from one or both sides of the uterine cornua. Sometimes the disease is easily made out by vaginal examination, at other times it is extremely difficult to detect, this difference depending on the amount of disease, the high or low attachment of the appendages, the amount of relaxation of the abdominal and pelvic tissues, and the amount of pain, actual or hysterical, experienced by the

[1] Read before the College ot Physicians of Philadelphia, March 5, 1890.

patient. That this is one of the conditions treated by Apostoli is evident from his own words:

"It (the electrical treatment) should be continued until the patient pronounces herself cured of her symptoms, and until an examination has satisfied us that the anatomical change is considerable."

He distinctly excludes pyosalpinx and hydrosalpinx in this connection, and dictates that "surgical interference should never be resorted to until after all electrical resources have been exhausted." This is an additional proof that we are considering the same conditions, as no true surgeon attempts, excepting under rare circumstances, to interfere surgically unless the tube is destroyed. So we may consider that Apostoli has in mind just such cases as I have described, when he claims to relieve salpingo-ovaritis. In no part of the numerous contributions of Apostoli can I find that he distinctiy claims to remove the organic lesions of a chronic salpingitis, and if any inference may be drawn from expressions bearing indirectly on this point, they are, that he does not pretend to accomplish this much. For instance, in the paper already quoted he cites "two typical cases." The first was under constant treatment for one year or more, the second for over five months. The history and examination of both cases showed that the patients were suffering from pelvic peritonitis, and that behind the peritonitis there existed diseased appendages, such as we are considering. Although he claims these cases as cures, at the end of the treatment in the first case:

"A deep exploration caused rather acute pain in Douglas's pouch. . . . The uterus was found to be slightly adherent to the sacrum. With a deep touch the right ovary could be felt, also the right Fallopian tube."

In the second case:

"On pressure, a slight ovarian pain in the left iliac region was observed; the uterus was normal, very movable laterally, but it could not be lifted without difficulty, on account of the posterior adhesive bands; some prolapse of the annexes, more pronounced on the left, with one tube in the recto-vaginal wall; no signs of salpingo-ovaritis."

From this comment, "no signs of salpingo-ovaritis," it will be clearly seen that Apostoli meant that he had cured the symptoms; that he did not remove the disease will be perfectly evident to any practical surgeon from the description of the local condition at the time of the patient's discharge, presumably cured.

The disciples of Apostoli are not satisfied to accept this ground as the limit of the possibilities of the electrical treatment of these inflammatory diseases, but out-Herod Herod, and make claims which they have utterly failed to substantiate.

Goelet, in a lecture on electricity in gynecology, delivered before the class of the New York Polyclinic (THE MEDICAL NEWS, June 22, 1889), says:

"That in the treatment of these conditions he finds that *exudations and adhesions melt away like ice under the rays of the sun.*"

Massey, in his book on *Electricity in Diseases of Women*, p. 160, says:

"Whenever chronic enlargement exists, a shrinkage to the normal size is an invariable record, and adhesions as well as exudations are generally noted as disappearing."

Lapthorn Smith (*American Journal of Obstetrics*, August, 1889, p. 805) says:

"Those who operate for this condition tell us that they frequently find the ovaries and tubes compressed and bound down by a retracting plastic effusion; but, owing to the stimulation of absorption, these exudations are removed and the ovary is left free."

Many other electricians write in much the same strain. Now it is just this difference between Apostoli and his disciples to which I desire to call attention. Apostoli is by all odds nearest the truth, but even he has gone a little too far, and will undoubtedly in time modify some of his statements. My own position on this subject is quite clear, and is based on a large clinical experience, a by no means small surgical experience, and by a most careful observation for two years or more of the electrician's work in these diseases. By this I mean that I have daily, during that time, stood by the side of experienced electricians, examined the cases when they first came for treatment, examined the patients during its continuance and to the end, and have seen many of them at varying times after they had been pronounced cured or had ceased to come for treatment. In all this time I have failed to observe a single cure of the disease. By this I do not wish to be understood as saying that I have not seen patients relieved of their symptoms and sufferings, for such a statement would not be true. I have observed a number of cases after a protracted course of treatment, during which some of them were at times much worse, become so much better as to express themselves as satisfied with the results; and yet they almost invariably returned with a relapse, or I would accidentally stumble across them in some other clinic seeking if they might not obtain the cure they had failed to obtain from electricity. Again, I have seen patients made worse during and by the treatment, and have on several occasions become cognizant of some of them who have been confined to bed for a week or more with an attack of peritonitis. I have in mind one recent case, who, after three months' treatment, and during the continuance of the treatment, became so afflicted. She came from her bed to me for relief, and refused to go back to electricity. She will be operated on

shortly. I could add a dozen or more cases who have absolutely refused to try the remedy a second time.

I will not burden my paper with a detailed account of a number of cases, but will satisfy myself with the full account of one case. I think I shall be able with it to bring out all the essential points and prove by it as much as could be done by many such. I have selected this case from a large number of similar failures which have come under my observation:

1. Because it so well represents the class of cases under discussion.

2. Because the treatment extended over so great a length of time (sixteen and one-half months), and the operation was not made until the electricians admitted they could not cure her.

3. Because she was treated by Dr. Massey himself, a gentleman who is quoted as an expert in this method of treatment, and therefore the failure cannot be attributed to a faulty application.

4. Because we can so accurately study the different steps of the disease and treatment during its course, and have been enabled to verify all our conclusions, and demonstrate the results with the specimens in our hands.

The case stands as an excellent type of all its kind, and the results of treatment of the kind will always be the same. The cases quoted from Apostoli's paper will be found to result in the same manner if they are followed up.

In Dr. Massey's book on *Electricity in the Diseases of Women* (Case XVI., pp. 161, 162) the case to which I would direct your attention is reported, and in order that I may not be tempted to exaggerate the patient's symptoms, I will quote the report verbatim:

"E. C., aged twenty-six years, married, a native of Poland, was referred by Dr. Bradford, Sept. 27, 1888. She had had three children and one miscarriage, the last pregnancy four years ago, since which time she had been in continuous pain, and had grown progressively worse. For the last four weeks she had been particularly bad, a sanguineous discharge having been constant. There is absolute dyspareunia, and any jar causes intense pain. Menstruation has been regular, normal in amount, attended with severe exacerbations of pain, followed by scanty yellow leucorrhœa. Examination shows uterus enlarged, somewhat anteflexed, and with fundus displaced to the right. Sound enters three inches with difficulty, producing excruciating pain. To the left of the fundus a mass is made out, consisting, apparently, of the ovary bound down by adhesions. The patient's physiognomy indicated intense suffering at every step."

From September 27th until November 13th, a period of about a month and a half, this patient was treated with electricity. Her condition at the end of that time is noted in the above quoted book (p. 163) as follows:

"Uterus measures two and a half inches, with fundus somewhat to right. The mass to the left is scarcely discernible, and the ovary can be detected higher up. Still under treatment."

In a letter written by Dr. Massey, in answer to a criticism on his book, in the *Annals of Gynecology*, August, 1889 (p. 528), he again referred to this case, and I here reproduce what he said at that time (eight months after the first report of the case); the case having in the meantime been under pretty constant treatment:

"The critic's oracular statement, 'that any attempt to melt away pelvic adhesions and indurations, other than simple congestion,' by electricity 'is futile and harmful,' is somewhat wide of the mark. No one attempts to melt these adhesions by the direct polar action of the current as they evidently suppose. The methods adopted include the morbid products within the interpolar zone of a galvanic current, and by cataphoric action promote their absorption. This treatment is necessarily tedious in many cases, but, if faithfully pursued, will lead often to most brilliant results. The ultimate result in Case XVI., in which there was a prolapsed ovary surrounded by exquisitely sensitive adhesions and indurations of four years' duration, is an excellent illustration of this fact, but was not related in the work, as the patient was still under treatment at the date of going to press. This patient had declined operation at the hands of one of the critics, and during the electrical treatment at the Pennsylvania Hospital was repeatedly examined by competent surgeons, who predicted failure. She has now been in the enjoyment of perfect health for some months, discharging fully all duties to her husband and children, even to doing the family washing. This case deserves particular mention, as it was the subject of sceptical criticisms at one of the medical societies while the treatment was in progress."

Within a few weeks after the above report the patient was back with a return of all her old troubles. After some weeks' treatment she was again discharged as cured, only to return in a short time as bad as ever. In the next few months she had periodical relapses, of which she was relieved at times by electricity, at other times by the ordinary gynecological resources. At the last relapse, Dr. Massey said, that if he did not cure her permanently this time, he would consent to an abdominal section being made. After weeks of electrical treatment—and during its progress she voluntarily came to me stating that she was getting no better, that she could bear her sufferings no longer, and that she would submit to the operation if I would perform it. On Friday, January 17, 1890, with the assistance of Dr. Bradford, and in the presence of half a dozen other gentlemen, I made an abdominal section and removed both tubes and ovaries. The omentum was adherent over the pelvic inlet, and required considerable manipulation to free it. Everything below it was adherent. One tube and ovary were curled up into a mass, and adherent on top of the fundus uteri. On one side there was a subperitoneal cyst containing a few drachms of serum, which was

ruptured during the manipulation. On the other side the ovary was distended with about half an ounce of bloody fluid. Both tubes were two or three times their natural size, very hard, and indurated. There was no trace of the fimbriated ends in either tube, the fimbria and ovaries being blended into one. The patient made an uninterrupted recovery and went home at the end of two weeks. To-day, over six weeks after the operation, she is without a sign of her old pains. What will be the subsequent benefit to the patient can, of course, be only conjectured, although I have every reason to expect, from past experience and present indications, a permanent cure. However, this is not at all material to the present discussion, my object being to show that *electricity will not cure chronic adhesions and organic disease of the uterine appendages*, rather than to prove that surgery will.

Four years before this patient applied for treatment, she had an attack of post-puerperal trouble, which resulted in an occlusion and destruction of both tubes, a general adhesion of all the contiguous pelvic serous surfaces, and was possibly the starting-point of the ovarian cystic disease. Whether there was pus in the tubes originally, I know not; there was none when she first came for treatment, and none at the time of the operation. With the exception of the pus, the tubes look in all respects like pus-tubes, and are in just such a condition as pus-tubes after the pus has been evacuated. The post-puerperal trouble finally subsided, leaving the appendages destroyed and adherent. After a lapse of time, owing to some indiscretion or exposure, an attack of pelvic peritonitis was set up as a complication. These attacks were repeated and became worse, and during one of them she made us her first visit. This was in September, 1888. After about five or six months' treatment, during which she was distinctly worse at times, she obtained relief, and was discharged cured, and was so reported by Dr. Massey in his letter to the *Annals of Gynecology*, August, 1889. She remained well for a number of months, and then, owing to another indiscretion or exposure, was attacked by another pelvic peritonitis. She remained well for only a few weeks this time, and then had repeated attacks at short intervals, until, finally, after sixteen and a half months, she was so worn out that she asked for an operation, which she had at first refused. During all this time her original disease (chronic adherent salpingitis) remained, and was in no wise affected by the treatment, unless it was made worse. I say made worse, because her old family physician, Dr. Raynor, examined her a week before the operation, and states that the disease was markedly worse than when he last saw her, one year and a half previously, since when she had been almost continually under electrical treatment.

What did the operation show? A condition of disease and adhesions which demonstrated most positively and conclusively that "the methods adopted" for her relief did not "include the morbid products within the interpolar zone of a galvanic current, and by cataphoric action promote their absorption," as was claimed. It proves beyond dispute, that not an adhesion was disturbed, and that the tubes themselves had not even begun to show any alteration for the better. There was the disease, and there it stayed. If the local disease was as bad as ever, what, then, happened to give her that interval of several months of apparent cure? As I said before, she had had repeated attacks of acute pelvic peritonitis complicating the chronic organic disease. It was the acute peritonitis which was relieved, but which just as surely came back on the slightest provocation. Now, this is just the point which I wish to emphasize. Electricity, properly and carefully applied, will in time relieve the pain of the pelvic peritonitis, but under no circumstances can it influence for the better the resultant chronic adherent salpingitis of the original attack. The first attack destroys the tubes, and every subsequent attack makes the chronic disease worse. If one is satisfied simply to relieve his patient of the inflammatory attacks as they occur, and to have them keep on returning with repeated sufferings, he can turn to the electrical treatment. He will, however, find this a particularly slow method, and will discover that often he can relieve his patient more quickly by hot water irrigations, glycerin tampons, and the free use of purgatives, combined with other well-known gynecological and general methods. If, on the other hand, he wishes to cure his patient permanently, he must remove the chronic disease which is the cause of the acute or subacute attacks; in other words, he must remove the uterine appendages. There is absolutely nothing short of this, in a certain number of cases, which will accomplish the desired end, and I am sorry to have to confess that this fails only too often.

Many women go for years after the disease has originated before the repeated attacks of peritonitis begin. During this interim the disease seems to remain latent, and does not give unbearable suffering. During this period a moderate amount of ordinary personal hygienic care will keep the woman in comparatively good health, and she may never reach the period of repeated attacks of peritonitis. But, if they once begin, the woman, especially the working-woman, knows few weeks of comfort. As a rule, the danger to life is not great, but the constant suffering is extremely wearing, and the patients do not need much urging to undergo an operation in

order to obtain relief. At any rate, electricity is absolutely powerless to cure them. The burden of the proof remains with the electricians. If they would convince those of us who have no faith in their methods, they must select their cases carefully, have them examined repeatedly by recognized and competent diagnosticians, and then, when they are through with their treatment, satisfy us that they are actually cured, and not simply relieved. It will not do that they should take a case in one of the periods of pain, relieve her of that pain, and pronounce her cured, even if she has no relapse for some months, or even a year or more. I have observed many of these women who have had their disease for four, five, or more years, and during that time had only two or three attacks of peritonitis. They had been under no kind of treatment whatever, and, therefore, their immunity cannot be attributed to treatment. If, however, this immunity should occur after being relieved by electricity, it would be, and is, claimed as a cure. As a matter of fact, all the cases reported cured by this method have gone on record within a few months after the completion of treatment.

I do not mean to say that all cases of chronic adherent salpingitis should undergo an abdominal section, because I am becoming more and more convinced that entirely too many operations are made for this disease. If a woman is in good circumstances, and can have ordinary hygienic and dietetic care combined with slight medication from time to time, she can, in the majority of cases, live a comfortable life. It is of the minority I speak, when I say that abdominal section is the only cure.

There is one other point on which I would touch. The electricians triumphantly state that when they begin their treatment there is great pain and suffering, large masses can be felt in the pelvis, and that as the symptoms subside under treatment these masses also fade and disappear. Such was the state of affairs in the cases quoted from Apostoli, and also in the case I have reported above. Now what is the explanation of this? With every attack of acute pelvic peritonitis there are large quantities of plastic exudates thrown out, and a vaginal examination gives the impression to the finger of hard, board-like lumps. So often have I mistaken these temporary exudates, which almost always disappear with the subsidence of the inflammation, for large chronically diseased tubes and ovaries, that I now never give a definite and decided opinion until I have had an opportunity to treat the case, and am able to see what is temporary and what permanent trouble. Until this is accomplished, it often takes a very well-trained finger to decide how much actual chronic disease exists. Here is a point of failure with the electricians. They get rid of the acute exudates, relieve the pain, and pronounce the patient cured, only to have them come back, or go elsewhere for treatment. The vast majority of these men are not trained in gynecological examinations, and have never done an abdominal section. I feel most strongly that no man is or will ever become a reliable diagnostician in these diseases until he has had his fingers on the disease both from below through the vagina and from above through the abdominal wall. It is well nigh impossible to gain an accurate knowledge of the condition of affairs in a pelvis ravaged by a septic or specific inflammation without having had one's fingers in a few such pelves and without having attempted to tear out the diseased parts.

What place, then, do I give electricity in the treatment of this class of diseases? Simply that of a therapeutic agent, which will mitigate, but which will never cure. I class it with glycerin, tampons, hot water injections, purgatives, etc., and I consider it the least valuable of them. The relief I have observed from electricity has been exactly what I have obtained from these other remedies, with this difference, that electricity is somewhat slower in its action. However, I must admit that I have seen electricity relieve where I had failed with other remedies, and *vice versa*.

Electricity, I would hold, if I had determined on mere palliation, as a last remedy, for the following reasons:

1. The treatment must be a local one, and must be given by the physician himself.

2. The apparatus is too expensive for any but a specialist to possess.

3. The patient must submit to a prolonged vaginal manipulation several times a week, sometimes for months.

4. It is necessary to remove a great part of the woman's clothing in order to administer the treatment properly and thoroughly.

The absolute failure to cure the disease, which I have shown in the above case, I could easily demonstrate in many others.

328 SOUTH SEVENTEENTH STREET.

TUBERCULAR ULCERATION OF THE INTESTINES.

Report of a Case of Osteitis of the Hip, Dying of General Tuberculosis. No Intestinal Symptoms during Life. Autopsy.[1]

BY V. P. GIBNEY, A.M., M.D.,
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THE following autopsy was made on a boy who had been an inmate of the Hospital for Ruptured and Crippled for about eight or nine months. He

[1] Presented at the meeting of the State Medical Society in Albany, February, 1890.

was admitted for the relief of deformity, resulting from old disease of the hip, tubercular in character. He came from a Western State and was in very fair condition at the time of his admission. It was my intention to do Gant's operation, but on examining more closely I found two or three open sinuses around the upper portion of the thigh, and I determined to postpone the operation, hoping that these sinuses would close. A splint was applied, which protected the joint, and he was soon going about apparently with less deformity. The sinuses continued to discharge, however, and in the latter part of the year 1889 he began to fail, and developed pulmonary tuberculosis. Full notes of his condition and symptoms were kept, and neither the trained nurse nor the house surgeon remembered that there was any diarrhœa or dysentery during his entire stay in the hospital. The examination was made by Dr. Holt, on the 25th of December, fourteen hours after death, and is as follows:

Body much emaciated. Head not examined. Lungs, no adhesions; no fluid in the pleural cavity. Both lungs closely studded with recent miliary tubercles; about one-third of the left upper lobe consolidated. On section, this area shows some cheesy nodules the size of a pin, and two or three minute cavities containing pus. The posterior portion of the upper lobe of the right lung shows a similarly consolidated area of smaller extent, giving a singular appearance upon section, but not quite so far advanced. There are smaller and larger areas of pneumonic consolidation throughout both lungs.

Bronchial glands are enlarged to about one-half inch in diameter; one or two are slightly cheesy; one partly calcareous; none broken down.

Heart: No tubercles on the pericardium; walls and valves normal; recent dark post-mortem clot filling both auricles and ventricles.

Liver slightly fatty; has a mottled appearance; no waxy change shown by iodine test; a few miliary tubercles on the surface.

Spleen slightly enlarged; not very consistent; tubercles upon the surface.

Kidneys normal. Stomach normal; capacity thirty-two ounces.

Small intestine: From above downward large transverse ulcers are present at intervals of two or three feet, the average size being one-half inch wide by one and one-half inches long, oval in shape, some nearly encircling the intestine, deeply excavated, and involving the muscular coats. Edges thickened and reddened, showing an active ulcerative process. Upon the peritoneal surface there is puckering, showing cicatrization; in one or two ulcers this is marked enough to produce a considerable diminution of the lumen of the intestine. In many places miliary tubercles are seen upon the peritoneal surface; no perforations. The largest ulcers are just above the ileocæcal valve; these are one and one-half inches wide and two and one-half inches long, and one surrounds the margin of the valve. There is considerable localized inflammation of the peritoneum covering the intestine in this region, and it is studded with miliary tubercles, the ulcers in almost every case beginning within Peyer's patches. The solitary follicles throughout the small intestine are enlarged to about the size of a pin's head. In the upper part of the small intestine the mucous membrane generally is healthy. In the lower two or three feet there are evidences of quite an intense enteritis, congestion, swelling, and œdema.

Large intestine: Two or three tubercular nodules, reddened, elevated, and broken down, but no ulcers; mucous membrane normal.

Mesenteric glands about one-half inch in diameter; a few are cheesy, and one entirely calcareous.

The diseased hip: Thigh is adducted; trochanter raised; two or three open sinuses on the inner aspect of the upper third of the thigh. The upper six inches of femur with a portion of the pelvis, including the acetabulum, removed. A specimen was then sawn open through the great trochanter and neck and shaft of the bone. The head of the femur was completely disintegrated and absorbed. About one-half of the neck of the femur remains, and thus forms a sort of articulation with what is left of the acetabulum. There is a pathological dislocation; small areas of broken-down osseous tissue are present at the upper and lower borders of the neck of the femur, but the general outline of the hip-joint is almost entirely obliterated. The capsular ligament seems to be intact. The shaft of the bone is healthy; no osteomyelitis. Bacilli very abundant in specimens taken from hip.

CLINICAL MEMORANDA.

MEDICAL.

A Case of Morphine-habit without Injurious Effects.— Divers writers, both lay and professional, have depicted with sufficient eloquence the horrors of the morphine-habit. It has been declared to derange nearly every function of the body; to cause paralysis of the will; to make the truthful mendacious, and much more which is familiar to every student of the subject. These statements have, for the most part, been accepted as the whole truth of the matter, and their universal applicability has not been seriously questioned. Nevertheless, Dr. B. W. Richardson, in the *Asclepiad*, has recently given the details of a case in which a man, sixty years of age, appeared after ten years' use of the drug to have derived therefrom considerable benefit. An equilibrium seemed to be established by the morphine which had hitherto been lacking, and the result was better general health and greater capacity for intellectual work.

A case even more remarkable has been under my observation for the past eight years. Every possible opportunity has been afforded me to study this case in all its bearings, and to verify every statement. The history is as follows: Mrs. X., widow, aged sixty, has been using morphine for seventeen years. She began its use at the age of forty-three, on account of insomnia, and has gradually increased the dose up to seven grains per day; but during the past year the dose has remained stationary. Notwithstanding her age, her complexion is fresh, her step firm, her carriage erect, her appetite good, and the functions of stomach and bowels perfectly normal. She enjoys seven or eight hours of dreamless and refreshing sleep every night.

Although possessed of considerable property, she is from choice constantly engaged in active labor, and, indeed, accomplishes an almost incredible amount of work without feeling exhausted; in fact, her general health is better now than ever before. Careful observation, aided by a long personal acquaintance, has failed to show any sign of that moral degeneration so strenuously insisted upon by authors. She is especially devoted to charitable work, and is very zealous in religious matters. Her affection for her children and grandchildren is intense, and sacrifices are freely made on their account. In her demeanor she is calm and dignified, and presents no sign of irritability or other mental deterioration. As in the case recorded by Dr. Richardson, she is perfectly satisfied with her present condition, and feels no necessity for reformation.

O. H. MERRILL, M.D.

CORRINNA, MAINE.

SURGICAL.

A Case of Subcoracoid Dislocation of the Right Humerus, and Compound Comminuted Fracture of the Forearm.—The following somewhat unique injury happened when I was on duty as Hospital Steward U. S. A., at Fort Barrancas, Florida. It is of interest, I think, considering the youth of the patient, and the good recovery that took place without any untoward symptom, and it shows very clearly the good results that occur from the simplest treatment for such a grave injury.

On the afternoon of Sunday, the 15th of September, 1889, G. J., a child six years of age, white, was brought to me at the Post Hospital by its mother. I was informed that the child jumped on the car which was used to haul supplies, etc., between the wharf and the post. The mother started to run the car down the track, but the child, becoming frightened, jumped off whilst the car was in motion. In jumping, his foot caught in a loose nail on the floor of the car, and he fell headlong on the track. He partly rolled over on his side, thus saving his head and chest, but one wheel went over his right arm. He was at once picked up and brought to the hospital.

I saw him about twenty minutes after the accident. There were no perceptible signs of shock. Placing him in a chair, and cutting away his shirt, the following injuries were observed: The right arm was hanging by the side, the elbow away from the body, while the inclination of the patient's body was toward the injured limb. Standing behind him with my two hands laid flat on each shoulder, with the forefingers on the acromion, and pressing the other three fingers firmly in under the process, it was at once apparent that the head of the humerus was not in place, the hollow under the acromion being clearly marked. Further examination showed that the head of the bone was lying under the coracoid process upon the anterior part of the neck of the scapula. In short, it was a well-marked case of subcoracoid dislocation of the humerus. There was a punctured wound about the size of a ten-cent piece, over the brachialis anticus, with slight hæmorrhage, and a compound comminuted fracture of the right forearm. Crepitus could readily be obtained. Careful examination of the head, neck, and chest gave negative results.

There being no medical officer at the post, and knowing that the first and principal indication was to replace the bone in its normal situation as speedily as possible, I proceeded to do so. No anæsthetic was given, as I considered that I was not justified in taking that responsibility without skilled medical attendance. I had four ways in which to reduce the dislocation: First, by the heel in the axilla; second, by the knee; third, by drawing the arm upward; and, fourth, by manipulation; and, after some thought, I choose the fourth method, my reason being that no violence whatever should be used, and, further, that this operation was not as painful as the other three must of necessity be. The patient being still seated in the chair, I flexed his elbow to a right angle and pressed it inward toward his chest; then, holding the elbow in one hand, and using the forearm as a lever, I rotated it gently and steadily outward till a distinct sense of resistance was felt. The arm was then raised with a slight inclination inward, and the hand was placed on the opposite shoulder, by which means a movement of rotation was given to the humerus. The plan was successful, and the bone slipped into place. The child was now laid on a bed, and a probe—thoroughly disinfected—was passed into the wound and the bone distinctly felt. From the direction of the probe I was afraid that the brachial artery might have been injured; after-circumstances, however, did not bear out this idea. A piece of lint spread with vaseline was placed over the wound, from which all hæmorrhage had ceased. An internal splint was applied, reaching from the axilla to the wrist, and two short pasteboard splints to the other three sides of the limb, care being taken not to press upon the axillary vein. Cotton batting was so arranged as to protect the inner condyle. Thinking that swelling and inflammation would certainly supervene, I considered it best to remove the vaseline dressing, and keep the forearm and shoulder under strict antiphlogistic treatment, which I did with lead-water and laudanum, a window being left in the splint for that purpose.

The child did well during the night. The temperature was normal, pulse 100.

On the 17th the condition of the little patient was excellent; very little inflammation: temperature normal; did not complain very much of pain.

On the 18th the old splint was removed, and a new one, made from perforated felt, applied. The lead-and-opium wash was discontinued. The wound in the forearm was dusted with calomel, and the whole covered with three thicknesses of carbolated gauze. Bandages soaked in silicate of sodium enclosed the whole.

On the 30th the patient was doing well; an angular

splint was applied, and he returned to his home, about three-fourths of a mile distant, to which he walked without assistance.

I saw him again in November last. There were no signs of deformity anywhere, except that there was about half an inch shortening. He could use each arm equally well.

Erichsen, in his *Surgery*, vol. i. p. 561, says that "in children under puberty dislocation of the head of the humerus scarcely ever occurs."

The main difficulty was found in keeping so young a patient in one position for over fifteen days, and the constant supervision and watching that were necessary. The services of the mother were worse than useless on account of her hysterical and nervous condition, and, if it had not been for the skilled attendance of one of the hospital corps, the case might have had a very different ending.

HERBERT GRAHAM,
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HOSPITAL NOTES.

ASPIRATION OF KNEE-JOINT; OVARIOTOMY; HYSTERECTOMY; AND OTHER CASES.

Abstract of a Clinical Lecture delivered at the University of Michigan, Ann Arbor.

BY CHARLES B. NANCREDE, M.D.,
PROFESSOR OF SURGERY.

PROFESSOR NANCREDE stated to the class that the undersized youth shown had been the subject of necrosis of both the humerus and femur, but had recovered with a somewhat damaged knee. About two weeks ago he fell, striking the joint severely, which produced an acute synovitis. His physician, not believing in strict antisepsis, had tapped the joint with what he doubtless believed was a clean needle, but one which probably was *surgically* dirty; hence the increase of trouble and the severe pain preventing sleep, even with the free use of morphine. It was doubtful if actual suppuration was present, but tension—one of the chief factors in causing inflammation—was clearly present, and if this were relieved, provided actual suppuration of the joint and consequent commencing destruction had not been initiated, arrest of inflammation and cure would probably result.

The joint was then carefully aspirated, under full antiseptic precautions, the puncture sealed with collodion, and a firm supporting bandage with a splint applied, the lecturer stating that, later, a Martin's elastic bandage would be used if the joint did well. The fluid removed was serum with a certain amount of purulent-looking deposit, which was believed to be composed largely of young endothelial cells and migrated white corpuscles, which were yet alive, and, therefore, not *pus*, strictly speaking, which is composed chiefly of fattily degenerated, dying or dead, cells of similar origin. This condition has been variously termed catarrhal inflammation, purulent arthritis, etc., to distinguish it from suppurative arthritis, a much graver affection.[1]

The next patient, a woman in her forty-third year, presented a very large tumor, which fluctuated distinctly, and was believed by her attendant to be free from adhesions. The lecturer was also inclined to that opinion, but emphasized the impossibility of determining the fact beforehand, and that a good deal of pain had been complained of at times, which might mean a chronic peritonitis with firm adhesions.

Upon incision the whole anterior and lateral aspects of the tumor proved to be adherent, and required a tedious dissection with the fingers, knife, and scissors, and numerous ligatures before the tumor could be delivered. The whole anterior abdominal wall was adherent, as were the stomach and part of the small intestine, requiring ligation, and leaving behind some small portions of the outer part of the cyst-wall, many of the adhesions being so strong and intimate as to demand the utmost care in their treatment. The operation lasted one hour and forty minutes. Drainage was here clearly demanded, as there were probably eighteen square inches of raw, oozing peritoneal surface. The remaining ovary being slightly diseased, was also removed. [The case pursued an uneventful course, the tube being removed on the sixth day.]

Dr. Nancrede took occasion to explain the after-treatment he pursued in such cases. For the first twenty-four hours a little hot water to drink at intervals, a thirst was complained of, after this, arrowroot water, beef-tea, broths in small quantities frequently repeated; pint of tepid water injected into the rectum if much next toast and tea; finally, at the end of a week, such solid food as the patient desires. Opium is used only rarely, and then not for *pain*, but restlessness and nervous excitement, interfering with sleep; of the two evils opium is, then, the lesser. On the third or fourth day a saline laxative is administered—he preferred Seidlitz powders, one-fourth, one-half, or a whole one, as the stomach would bear it—repeated every hour or so until free purgation is induced. Should much pain with distention appear, which did not yield to turpentine enemata, purgation was instituted earlier. Quinine, digitalis, and strychnine, with stimulants, especially champagne, had kept up the heart's action in a previous case; the strychnine, given hypodermically, aiding in the expulsion of flatus. The case was unquestionably saved by the judicious use of these remedies with peptonized food, both by the mouth and rectum. Even with the vomiting of marked peritonitis, purgatives will do good if they can be retained; if not, give Epsom salts by enemata, as the lecturer had done in another case, and fed almost entirely by the rectum. Large accumulations of flatus with much liquid fæces can often be removed by the rectal tube, which had best be worn for a short time rather than frequently introduced.[1]

The lecturer, referring to operations for the radical cure of hernia, stated his belief that many of the statistics of the results of this operation were worthless, insufficient time having elapsed to demonstrate whether a cure had really been effected. Where a hernia could not be re-

[1] From the moment of aspiration all pain and inflammation ceased, sleep was normal, and prompt recovery with a good joint ensued within three weeks' time.

[1] Microscopic examination of the tumors removed from a case at a previous clinic, where secondary hæmorrhage occurred necessitating reopening of the wound, proved that they were carcinomata and undergoing mucoid softening. There was a firm fibrous envelope enabling the ligatures to hold firmly, but the soft interior portion of the pedicle was gradually forced out, thus lessening the pressure of the ligature so as to allow some vessels to ooze.

tained by a truss, the operation was always both justified and indicated, because even if the protrusion was not permanently restrained, a truss could be worn, rendering the patient a useful member of society, and no longer exposed to the risks of strangulation. When operating for this latter condition the surgeon should always aim at a radical cure, if the condition of the parts and the patient permitted.

So much diversity of opinion exists among different operators that but few universally applicable principles have been established, but to Dr. Nancrede's mind two or three facts seem to be well established, at least for inguinal hernias, viz., that the sac should be removed high up; if possible the valve-action—alleged to be normal—of the inguinal canal should be restored by drawing the postero-internal boundaries of the canal behind the antero-external and keeping them there until sufficient plastic material should be formed to hold them in contact, rather than any attempt to approximate the margins of the ring which will not adhere firmly and soon yield.

The case before the class had been operated upon by Professor Maclean, two years ago, for a very large hernia on the right side, which had remained reduced for a long period, but, as was very common, had gradually returned, though, compared to its former size, it was now a most trivial affair. On the left side was a large hernia which the lecturer operated on in the following manner:

The sac was exposed, under strict antiseptic precautions, dissected loose well up beyond the internal ring, divided, sewed up with a purse-string of stout catgut and the stump pushed above the ring. The remaining portion of the sac, except enough to form a tunica vaginalis for the testicle, was excised, and the walls of the canal approximated by a stout silver wire, after the method of Mr. John Wood, this wire being removable in two straight pieces by reversing the twists and cutting the loop on or about the tenth day. To secure most effectually a large mass of plastic material, sutures were passed through the wound-lips, but *not tied*, a drainage-tube placed *in situ*, secured by a stitch, and the wound packed with iodoform gauze. When granulation tissue had been formed in large amount the packing would be withdrawn and the wound coaptated by tightening the sutures.

The next case presented was Mrs. H., aged forty-two years, colored, the mother of one child seventeen years old, never having conceived since, and with perfectly regular menstrual periods. She had noticed seven years previously a tumor, which has now grown so as to fill completely the true pelvis and a large portion of the abdomen. For one year past it had produced steadily increasing pressure-symptoms which now bring her to Ann Arbor for operation. There was some doubt whether these hard, partly movable abdominal and apparently fixed pelvic growths were not two solid ovarian tumors, since absolutely no information could be obtained by examining the uterine cavity, the os being bound above and to the right of the symphysis pubis. The absence of uterine hæmorrhage was in favor of this view; still, the diagnosis of fibroids had been made and Professor Nancrede had come prepared to extirpate the uterus, if an exploratory incision warranted this procedure.

An incision extending nearly from the ensiform cartilage to within two inches of the pubes enabled the operator, aided by an assistant forcing up the pelvic mass through the vagina, to deliver with the utmost difficulty a large, nodulated, irregular mass of fibroids between four and five pounds in weight. The left broad ligament, including the tube, was clamped, ligated, and cut, the bladder isolated and a temporary elastic ligature applied to arrest the hæmorrhage from several large veins in the growth, lacerated in the efforts to deliver the tumors. The right ovary and tube were now removed and the wire of a Kœberle *serre-nœud* applied, the skewers passed, and the tumor and elastic ligature cut away. The operation was completed by sewing the peritoneum carefully around and to the stump, searing this with the thermo-cautery, the introduction of a drainage-tube just above the pedicle and the closure of the wound. Little if any shock was noted. The usual methods to insure cleanliness were instituted, the stump being occasionally also mopped with tincture of iodine. [From time to time the wire was tightened, the softening stump trimmed away with scissors, and the constrictor was carefully removed on the twenty-fourth day because it could no longer be tightened, had ceased to constrict, and was a constant source of annoyance to the patient. The small remains of the stump were removed piecemeal, and although the patient had at the outset a sharp attack of peritonitis, a satisfactory recovery ensued; at the end of seven weeks, only a small granulating patch being left at the point of emergence of the pedicle.]

Dr. Nancrede then presented a case of nasal deformity. He had been unable to find any record of a similar case in a hurried review of the literature of the subject, but, of course, such may exist. In reality, the condition is one where the two imperfect rings formed by the alar cartilages on either side, instead of being in contact in the median line for a considerable distance, by flattening of their opposed surfaces, have remained circular, and touch only at one spot—viz., at the anterior nasal spine, producing the effect of the so-called double-nosed pointer dog. When an infant, an attempt at cure was made by excising a wedge of tissue from the nasal tip and suturing; this has made the deformity more apparent, the elastic force of the cartilages acting like two springs to pull the tissues away from the median line.

The indications were clear enough; whether they could be effectually carried out, remained to be seen.

A tenotome was introduced along each side of the septum, and two parallel submucous divisions of the median aspect of each cartilaginous ring were made, when a suture of silkworm-gut was passed within the nostrils so as to include the partially divided cartilages and draw them together medianly: an extemporized septum compressor was then introduced with a blade in either nostril, gently held together by an elastic rubber band.

The lecturer explained that success would result slowly, if at-all, and in the following manner: His submucous division of the cartilages would, to a certain extent, overcome their elastic recoil from the median line. The traumatism of the knife-cuts and the suture would result in the effusion of a considerable amount of plastic matter between the cartilages, which, after the manner of all such new tissue, would contract, tending to hold and draw more and more together the widely separated cartilages. When all that could be thus effected was secured, another operation might be attempted to raise

the depressed median cicatrix left by the former operation. A tenotome could be introduced, the scar dissected loose subcutaneously, elevated into an actual projecting ridge, and held there by harelip pins or sutures; in time the ridge would be levelled down, leaving a comparatively normal tip to the nose.

The next patient, a weaver, about thirty years of age, some two weeks ago noticed pain and swelling in the groin, which led him some days later to his physician, who said that on taxis one of two inguinal tumors apparently disappeared. The patient then had a distended abdomen, with constipation, but no vomiting; moreover, his doctor thought he recognized the characteristic gurgle of a reducing intestine. There has been slight elevation of body-heat, persistence of the bulk of the swelling, and now, within the past few days, vomiting has set in, with an increase in size of the tumor, which lies chiefly over the site of the internal abdominal ring. The inguinal canal is free from anything like a terminal protrusion, yet there is a history of an apparent partial reduction of a hernia, distended abdomen, and vomiting. The swelling is found to be both below and above Poupart's ligament, and seems to contain pus; in other words, we have a suppurating bubo.

How are the symptoms to be explained? It has been shown that every symptom of strangulation, even to apparent fæcal vomiting, can be induced by irritation of the peripheral sensory nerves of the abdominal wall and adnexa, which will arrest peristalsis. Thus, an inflamed testicle, especially when retained in the inguinal canal, an inflamed hydrocele, and more than once just such cases as this have simulated a strangulated hernia so closely that experienced surgeons have been compelled to make an exploratory incision. Opening of the abscess put a prompt end to all the peculiar symptoms.

CLINICAL CASES.

Selected from the Service of

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[Reported by A. J. OCHSNER, M.D., B.S., F.R.M.S., Chief of Surgical Clinic.]

CASE I.—Sylvia M., aged sixteen years, American school-girl. At the time of birth a small nævus was noticed opposite the infra-orbital foramen; this constantly increased in size until, at the time of the operation, she had a venous angioma covering the entire cheek, and including one-third of the upper lip, producing an extreme degree of deformity. The tumor had a thickness of one and one-half inches, and appeared through the skin covering the cheek and the mucous membrane of the lip and mouth as a somewhat irregular, purplish mass.

Operation November 22, 1889. A curved incision was carried from a point one inch below the external angle of the eye to the angle of the mouth, through the skin and fascia. Care being taken to remain outside the substance of the tumor, a thick silk suture was carried around the facial artery at a point where it crosses the lower jaw, and was tied temporarily. The upper lip was resected to the extent involved, the incision was then carried along the border of the nose to a point three-quarters of an inch below the inner angle of the eye. As much as was possible of the mucous membrane lining the mouth was saved by carefully dissecting it from the mass. All the soft tissues of the cheek had been destroyed by absorption from pressure, so that the tumor had to be dissected up from the bone. The entire flap being loosened, those portions receiving their blood-supply from the transverse facial and the infra-orbital vessels were separated and these vessels caught in hæmostatic forceps; then those portions of the skin directly involved in the angioma were cut away, and the remaining very irregular flaps dissected from the underlying angioma, and twisted about and sewed together in a manner calculated to prevent the occurrence of ectropion from cicatricial contraction, and to cover the entire surface. The remnants of the mucous membrane lining the mouth had previously been united by a continuous catgut suture. A small iodoform-gauze drain was introduced under the flap. Very little blood was lost during the operation. The wounds healed kindly, and the patient was discharged on the twentieth day after the operation. The deformity was much less marked than before the operation, and has continued to decrease. The irregularities caused by twisting the skin flaps have already disappeared to a marked extent.

CASE II.—A woman nineteen years old. Congenital angioma, as large as a pin-head when first noticed, near the centre of the upper lip. When presented for operation it was as large as a hen's egg, of a purplish color, disappeared upon pressure, but returned immediately after pressure was removed. It almost entirely covered the mouth, the tissues of the upper lip being displaced to either side and partly absorbed from pressure.

Operation December 4, 1889. Compressing the upper lip moderately on either side, by means of large forceps, an incision was made through the skin, and the tumor dissected out. The remnants of the lip were now united by sewing together the mucous membrane, the muscular layer, and the skin by means of separate rows of sutures. Perfect union took place, and the lip has already stretched to a fair length. The deformity is very slight, compared with the original one, and is constantly decreasing.

CASE III.—The patient, a woman of twenty-six years, had a small nævus on the upper lip, a little to the left of the centre, which constantly enlarged, notwithstanding treatment with electrolysis, until it became a purplish mass as large as a hen's egg, causing the upper lip to extend far below the under and up on the left cheek.

Operation January 15, 1890. The tumor was carefully dissected out; the hæmorrhage was very slight, being controlled mainly by pressure; the remnants of the lip were united by three rows of sutures, as in the previous case. The wound united kindly, and the lip is assuming a very natural appearance; the scars are slight, and the deformity is decreasing.

In these cases the hæmorrhage was slight, because the dissection was made outside of the tumor, for it is only when the tumor is cut into that there is any considerable loss of blood. In case of bleeding from the tumor, it is most easily controlled by lifting the mass from its base, and grasping it between the finger and thumb. After such operations the deformity is usually much less than anticipated, because the tumor displaces rather than destroys the surrounding tissues.

In all these cases the dressings consisted of iodoform gauze and borated cotton.

CASE IV.—The patient was a Scandinavian woman, forty-eight years old, of good habits. For twenty years she has had a right inguinal hernia, usually retainable by means of a truss; seventy-two hours previous to her admission it had become incarcerated, and all attempts at reduction, made by the patient, were in vain.

Operation November 17, 1889. Upon opening the sac the intestines were found to be black with small whitish spots of lymph here and there. The peritoneal covering of the intestine, however, still had its shining appearance, and the intestines were returned into the peritoneal cavity after enlarging the ring by means of a probe-pointed knife, guided by the finger. The sac was so nearly necrotic that it was peeled out without effort or bleeding. It was cut off a little outside of the ring, and the ring and canal were packed with iodoform gauze, and iodoform gauze and borated cotton dressing were applied. The patient's temperature fell from 103° to 99.5° during the next twenty-four hours, and much flatus was passed. On the second day there were three free evacuations of the bowels. The patient continued to progress, and the wound remained aseptic, although there was some serous discharge from the necrotic surfaces. On the tenth day the patient had some pain, which subsided after taking some hot brandy. On the twelfth day the discharge from the wound, which had been kept open by the iodoform gauze, had a slightly fæcal odor. For one week there was some fæcal discharge, but the wound again became clean, the amount of packing was decreased, and nine weeks after the operation the wound was entirely healed. The canal is now filled with a solid mass of connective tissue, and the patient's bowels act normally. The patient's life was undoubtedly saved by the use of iodoform packing, which permitted the discharge from the break in the intestine to come out, and so preventing the occurrence of perforation peritonitis by keeping the external wound wide open. The wound in the intestine healed rapidly, preventing the annoyance of a fæcal fistula.

CASE V.—The patient, a woman, twenty-nine years old, had suffered for two years from left inguinal hernia; the pain was very severe, and excited nausea when the hernia was down. It was never very difficult to reduce the hernia, but always quite painful.

Operation January 21, 1890. The sac contained the ovary and a portion of the Fallopian, distended to three-fourths of an inch in diameter and adherent to the inner margin of the ring. The tube and ovarian artery were ligated by transfixion with a double ligature, and the ovary and enlarged portion of the tube were removed; the stump was returned into the abdominal cavity; the sac dissected out, ligated, and cut away, and the ring and canal closed by continuous catgut sutures. The wound healed primarily, there being nothing abnormal in the recovery, excepting a slight abscess in one of the stitches through the skin. There is a firm mass in the canal, and no protrusion upon coughing or straining.

CASE VI.—Patient was a married woman, twenty-eight years old. An irreducible femoral hernia was induced by patient making a misstep. During the first twenty-four hours several fruitless attempts at reduction by taxis were made by the attending physician. On January 23d, twenty-four hours after the occurrence of the accident, herniotomy was performed. The sac was black, and the hernial fluid dark-colored and of extremely bad odor. The hernia was found to consist of the elongated and perforated vermiform appendix, which had become necrotic except at its base. An enterolith was found free in the cavity of the sac, having escaped through the opening in the appendix. The appendix was tied at its base with silk, and cut off, and its cavity thoroughly cauterized with strong carbolic acid; the sac was dissected out, and cut off without tying, and the wound was packed with iodoform gauze. On the fifth day there was a distinct fæcal odor in the packing; this odor lasted four days. The wound healed by granulation from the bottom, being entirely closed on February 23d. There was, at no time after the operation, any rise in temperature, or any other symptom indicating the gravity of the conditions present at the time of the operation. Here, again, the free packing of the wound with iodoform gauze was a source of safety to the patient.

CASE VII.—The patient is a man, twenty-five years old, carpenter by trade. Four months ago, while lifting a heavy weight, he felt a severe pain in the left inguinal region, and directly after noticed a tumor in this region, which gave rise to much pain and some nausea. The attending physician diagnosed an omental hernia, which he reduced in part by taxis, getting the characteristic gurgling sound, which was also heard by the patient. Physician and patient state that the tumor was twice its present size before the use of taxis. The remaining portion of the tumor continued to be painful, became slightly larger, and somewhat inflamed, the skin being red over it. At the time of the operation, January 20, 1890, the tumor had the appearance of a bubo. The incision over the inguinal canal exposed an infected lymphatic gland as large as a walnut.

The abdominal ring was large, but no hernial sac could be found. The wound was packed with iodoform gauze, and healed rapidly by granulation.

The patient denies the possibility of specific infection.

CASE VIII.—The patient, a man, twenty-four years old, whose right testicle has never descended into the scrotum, has experienced much difficulty in retaining a congenital hernia of the right side. When it is down there is severe sickening pain, which is readily relieved by reducing the hernia.

Herniotomy February 18, 1890. The sac was found empty at first, but, upon straining, the testicle, about half the normal size, came through the ring. It was impossible to bring it down into the scrotum. Ligation by transfixion with double silk ligature, removal of testicle, and returning the stump into the ring were practised. The canal was closed by three rows of continuous catgut sutures. By February 24th the wound had united throughout.

CASE IX.—Mrs. C., housewife, forty-six years old. For eleven years this patient has been treated in vain for lupus of the face. As a result of the irritation, there is now a distinctly marked epithelioma implicating an oval surface four by six inches, including one-fifth of the ear and extending in front above the ear over the side of the face and scalp.

Operation November 4, 1889. Removal of skin and fascia one-third of an inch beyond all parts of the disease, including the diseased parts of the ear. After ligating the large vessels, the entire surface and the margins

were thoroughly cauterized with the Paquelin cautery. An iodoform gauze and borated cotton dressing was applied and allowed to remain for a week, then a wet two per cent. carbolic acid dressing was applied and renewed every third day to stimulate the exfoliation of the eschar. After three weeks the entire surface was covered with fine healthy granulations. These were curetted away and the surface covered with long shavings of skin, after Thiersch's method; these were covered with strips of Lister protective silk, borated cotton, wet with 6 to 1000 solution of table salt, over this a piece of gutta-percha tissue was placed, and over all a large piece of cotton and a roller bandage. This dressing was changed every second day for ten days.

The wound on the ear was freshened and united with the part attached to the side of the head, causing it to look quite natural and only a little smaller than the one on the other side.

After two weeks the entire surface was smoothly healed, and by wearing a wig, the apparent deformity was very slight. In quite a number of cases where we have grafted skin, after Thiersch's method, on defects caused by the removal of tumors the results have been very satisfactory. These cases will be published in full at a later date.

CASE X.—Six months ago the patient, a man, forty years old, had his face severely burned by the explosion of natural gas in a shaft. When healing was completed there was ectropion of both lids of each eye, so that what was left of the eyebrows and eyelashes was almost completely united.

Operation November 30, 1889. An incision was made parallel to the margin of the lids and one-eighth of an inch away from them, extending quite through all of the cicatricial tissues and into the subcutaneous connective tissue. The margins of the upper and lower lids were now united by rows of continuous sutures of fine silk. The bleeding was controlled by pressure. The entire surface equal to the area of the skin covering normal eyelids was covered with grafts, according to Thiersch's method, care being taken to press the skin into the depressions caused by the incisions. Salt water compress was applied and changed every other day for ten days; at the end of two weeks the lids were liberated and the patient advised to use his eyes carefully. The lids were well covered and the eyes well protected, which condition has continued to improve since the operation.

CASE XI.—Mr. D., sixty-five years old. Patient had suffered for several years from increasing ectropion of lower lids. Conjunctivæ highly inflamed, tears constantly flowing down over the cheek.

Operation December 8, 1889. An incision was made parallel to the margin of the lower lid and one-fifth of an inch from it, extending through the skin and into the subcutaneous connective tissue. The lower lids were then fastened over the upper lids by means of six stitches held on the forehead by rubber adhesive straps for the purpose of immobilization. The raw surface thus formed was covered with skin grafted after Thiersch's method. After ten days the lids were released, the grafts had "taken" throughout and the irritation on the conjunctiva had begun to subside. Six weeks later the lids were quite normal, and they have continued so to the present date, ten weeks after the operation.

MEDICAL PROGRESS.

Parasiticide Ointment.—According to the *Journal of Cutaneous and Genito-Urinary Diseases*, the following is useful, both in skin affections depending upon pediculi as well as in those due to the vegetable parasites:

℞.—Salicylic acid . . . 45 grains.
Borax . . . . 15 "
Balsam of Peru . . . 30 "
Vaseline . . . . 5 drachms
Ethereal essence of anise . 5 drops
Essence of bergamot . 20 " —M.

Prescription for Pruritus.—The following prescription for pruritus of the anus or vulva is quoted in the *Buffalo Medical and Surgical Journal:*

℞.—Sodium hyposulphite . . 3½ drachms
Carbolic acid . . . 30 grains.
Glycerin . . . . 2 drachms.
Water . . . . 3½ ounces.—M.

Nutritive Enema.—According to the *Satellite*, JACCOUD recommends a nutritive enema composed as follows:

℞.—Beef tea . . . . 8 ounces.
Wine . . . . 4 "
Yolks of two eggs.
Dry pepsin . . . 1 to 5 drachms.

Tincture of Capsicum in the Pneumonia of Drunkards.—DR. NETSCHAEFF, in the *Vratch*, highly recommends the tincture of capsicum in the treatment of pneumonia occurring in alcoholics. He uses the tincture of capsicum annuum according to the following formula:

℞.—Tincture of capsicum . 1 drachm
Water . . . . 5½ ounces.
Syrup . . . . 5 drachms.—M.

One teaspoonful every two or three hours.

The pure tincture in doses of 20 drops, well diluted, may also be employed. If in spite of these doses the heart becomes weaker and the nervous symptoms more pronounced, the dose should be increased, as no harm will follow the administration of very large amounts.

The author thinks that the remedy causes the disappearance of delirium, modifies the character of the pneumonia, increases the appetite and promotes sleep. —*Wiener medizinische Presse*, February 23, 1890.

The Treatment of Scabies with Petroleum.—DR. BOURGEOIS, in the *Revue Générale de Clinique et de Thérapeutique*, gives the following details of the treatment of scabies with petroleum, which he believes is one of the most efficient parasiticides: The first day he orders, just before the patient retires, inunctions of petroleum over the whole surface of the body, except the head, rubbing more particularly the affected surfaces. The shirt is then resumed and the patient put to bed. The next morning the greasy substance is washed off with warm water and white soap. The linen is changed, and the patient goes about his usual occupation. At night, before retiring, a new application of petroleum is made, as before, and the following morning the same procedure to remove

the oil. Ordinarily, after the second day the itching is completely relieved; but, as a measure of security, it is well to make a third application, after which the patient may be considered completely cured.

The author claims that this treatment is entirely innocuous and free from pain. It would seem to be quite efficacious, since in fourteen cases there were fourteen complete cures, without the necessity of disinfecting the garments.—*Journal of Cutaneous and Genito-Urinary Diseases*, March, 1890.

The Cause and Treatment of Chlorosis.—According to the Paris correspondent of the *British Medical Journal*, M. DUCLOS believes with Sir Andrew Clark, that chlorosis is a fæcal auto-intoxication, which should be treated by purging, prolonged until the intestine is completely freed from all the hardened and decomposed fæcal matters. He recommends a vegetable rather than meat diet. When constipation is not very marked the affection results from the great activity of putrid decomposition, and should be treated with carbonate of soda combined with carbonate of lime, magnesia, and charcoal. Iron is beneficial because it forms an iron sulphide with the hydrosulphuric acid in the intestine. Hyposulphite of sodium has been of use in checking fæcal fermentation; naphthol might serve the same purpose.

The Analgesic Properties of Exalgine.—DR. THOMAS R. FRASER has been conducting a series of observations upon the analgesic effects of exalgine (*methylacetanilide*) in the Edinburgh Royal Infirmary. The studies were with sixteen diseases in twenty-one patients, and, among other affections, included facial neuralgia, sciatica, locomotor ataxia, rheumatic synovitis, abdominal cancer, and aortic aneurism. The doses prescribed were small, one, two, or four grains, and the largest amount given in twenty-four hours was fourteen grains. No disagreeable symptoms were produced in any of the patients. An analysis of his lecture (*British Medical Journal*, February 15, 1890) shows that eighty-eight separate administrations of the drug were made and that in sixty-seven pain was relieved. The condition of some of the patients, however, was such that relief could not be expected without general narcotism. The best results were obtained in the various forms of neuralgia where fifty-two administrations gave relief forty-eight times. Dr. Fraser concludes his lecture by stating that the analgesic effect of exalgine is not a very powerful one, but that it has the enormous advantage of being free from the inconveniences of other pain-subduing agents and from the dangers of the more powerful of such agents.

GAUDINAU (*Therapeutische Monatshefte*, February, 1890) also writes in praise of the analgesic properties of exalgine, and states that a single dose of from four to eight grains causes the pain of neuralgia and of rheumatic synovitis to disappear within an hour. The only unfavorable effects observed are occasionally tinnitus aurium and a feeling of intoxication. The author prescribes the drug as follows:

℞.—Exalgine	37 grains.
Alcohol	3½ drachms.
Syrup	1 ounce.
Water	6 ounces.—Mix.

One tablespoonful as required.

At the recent International Congress of Therapeutics held in Paris there were a few dissenting voices, but the majority of speakers upon exalgine considered it a valuable analgesic. Mr. Bardet stated that much of the so-called exalgine is in reality a different and inert substance. M. Dujardin-Beaumetz believed that it had undoubted analgesic properties, but that on the whole it was inferior to antipyrine. He had also found that if continued long or given in large doses disagreeable though harmless giddiness was often produced.

Collodion in Atony of the Tympanic Membrane.—DR. KELLAR, of Cologne, uses collodion in the treatment of deafness due to relaxation of the tympanic membrane. After the middle ear is inflated the patient's head is strongly inclined toward the healthy side, an aural speculum is introduced, and the collodion dropped into the auditory canal. The excess of collodion is immediately absorbed with cotton. An examination is then made, and if the membrane is not completely covered the procedure is repeated. The author claims that the effects are excellent.—*Wiener medizinische Presse*, February 23, 1890.

Mussanin; a New Anthelmintic.—In the bark of an Abyssinian tree, the Acacia Anthelmintica, THIEL has discovered a new anthelmintic which he terms *mussanin*. The anthelmintic properties of the drug are said to be more powerful than those of koussu and the taste is much more agreeable. The powdered bark may be given in doses of from one to two ounces, or it may be administered in the form of an infusion. The author considers that the drug is destined to assume an important position in therapeutics.—*Wiener medizinische Presse*, February 23, 1890.

Prescription for Pityriasis Capitis.—DR. M. D. STERN recommends the following ointment for pityriasis capitis:

℞.—Ammoniated mercury .	2½ drachms.
Green soap	10 "
Lanolin	1½ ounces.—M.

—*Journal de Médecine de Paris*, February 23, 1890.

Orexin.—The Berlin correspondent of the *Provincial Medical Journal* writes as follows on the use of orexin, a remedy recently introduced, which is said to increase the appetite and aid digestion. Clinically the drug has been tried in cases of loss of appetite following operations and accompanying phthisis, affections of the stomach, and various other diseases, such as albuminuria, anæmia, and dyspepsia. The results of the use of orexin hydrochlorate in thirty six cases were in accord with the observations on normal individuals; the appetite was stimulated and the digestive powers increased. The amount administered never exceeded eight grains at a dose nor twenty-four grains daily, though these doses produced no unpleasant symptoms. It was found that one, or at most two doses daily were sufficient to cause the desired effects. It was at first prescribed in wafers, but owing to its bitter taste and the production of a burning sensation in the mouth and throat, gelatin-coated pills were found to be preferable. On account of the irritating properties of the drug large quantities of fluid should be swallowed after each dose.

THE MEDICAL NEWS.

A WEEKLY JOURNAL

OF MEDICAL SCIENCE.

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SATURDAY, MARCH 22, 1890.

THE RELATIONS BETWEEN THE BACILLUS COLI COMMUNIS AND THE BACILLUS OF EBERTH.

PROBABLY the bacteriological question of greatest practical interest is whether an organism may be benign in one locality and malignant in another; or, to state it differently, whether the property of infection is an adventitious one depending upon the soil in which the organism grows, or inherent in its substance. An attempt to solve this problem, in so far as it relates to the typhoid bacillus, has just been made by RODET and ROUX (*Comptes Rendus Hebdomadaires des Séances de la Société de Biologie*, February 21, 1890), whose researches have led them to conclude that the bacillus of Eberth is nothing more than a modification of the bacillus coli communis.

The facts upon which they base this opinion are of two kinds. In the first place, they made cultures of the blood of the spleen and of the fæcal matters of two typhoid patients, and found that the former produced nothing but the bacillus of Eberth, and the latter little else than the bacillus coli communis —the bacillus of Esherich.

In the second place, according to Rodet and Roux, the optical points of resemblance between the two bacilli are greater than those of difference, and are such as to warrant the belief that the one is a modification of the other. Carefully conducted cultures in gelatin, potato, and bouillon, exhibit similar macroscopic appearances, while the limits of temperature within which the two organisms can be cultivated are almost identical, being somewhat higher (46.5° C.) in the case of the bacillus coli than in that of Eberth's bacillus (45°).

Under the microscope the differences are more marked, the bacilli coli being of almost uniform length, homogeneous in structure, slightly mobile, and staining readily, while the bacilli of Eberth are of unequal length and thickness, are more mobile and stain less readily than the bacilli coli. The structure of their protoplasm also is evidently not homogeneous.

If, however, the bacillus coli be cultivated at a temperature of 44° to 46° C. it undergoes such changes as to cause it to bear a remarkable resemblance to the typhoid bacillus. The rods become of unequal length; their protoplasm ceases to be homogeneous, and presents a series of readily staining condensations, separated by clear intervals; in a word, the result of numerous observations of the sort is to show that while the type of Eberth's bacillus is relatively fixed, that of the bacillus coli is remarkably unstable, and, by a series of transitions, approaches and even becomes identical with the former.

The typhoid bacillus of Eberth is, according to the authors quoted, the bacillus coli in a state of degeneration. This is shown by the fact that the former is less able to resist heat than the latter, Eberth's bacillus being destroyed by a temperature (80° C.) which is supported by the bacilli coli. This is far from saying that the bacillus which causes enteric fever is in a state of degeneration at the time of infection. The bacillus coli becomes virulent without any notable change in its appearances and other characters, and it is in the interior of the organism, especially in the spleen, that it assumes the features of Eberth's bacillus. The latter are the result of the destructive forces of the body. The practical conclusions from these researches are twofold:

1. Water contaminated with fæcal matter, not necessarily typhoidal, may give rise to enteric fever.

2. The tolerance of the organism for the bacillus coli shows that the latter acquires its virulent features outside of the body.

It is to be hoped that the experiments of Rodet and Roux will be thoroughly investigated. Certainly, none more practical could engage the atten-

tion of bacteriologists. If confirmed, the term pythogenic fever, introduced many years ago by Murchison, may yet be generally accepted as the proper one for the disease which is now somewhat vaguely styled typhoid or enteric fever.

REVIEWS.

MONTHLY NURSING. By A. WORCESTER, A.M., M.D. Second edition. 12mo., pp. 250. New York: D. Appleton & Co., 1890.

THE important position assumed by skilled nursing during the past few years is well shown by the number of text-books on the subject which have appeared. Unfortunately, many of these books are more fitted for the medical student than the student nurse, containing much that the latter neither can nor need understand. Such cannot be said of the volume before us. Written in the attractive style of an easy conversational lecture, it makes no attempt to teach more obstetrics than is absolutely required by a competent nurse in dealing with the emergencies and trying circumstances with which she is sure to meet. The author has also "tried to tell what kind of service the physician and the patient have the right to expect from the monthly nurse," and, we may add, tried with entire success. For these reasons the book is of more value to the nurse, and less to the physician, than any with which we are familiar, though its usefulness could have been still more increased by the addition of a few wood-cuts, a more copious index, and some system of convenient reference.

HAND-BOOK OF MATERIA MEDICA AND THERAPEUTICS. By SAMUEL O. L. POTTER, M.A., M.D. Second edition. Revised and enlarged. Philadelphia: P. Blakiston, Son & Co., 1890.

ALTHOUGH Potter's *Therapeutics* has been but a short time before the medical profession, there can be little doubt that it has come to be regarded as one of the works to which American medicine can point with pride. Its chief fault seems to us to lie in the endeavor of its author to place too much minute information on a comparatively small number of pages; that is to say, the portion of the book which is devoted to materia medica and therapeutics might, without disadvantage, fill the entire volume. The discussion of part third, known as Special Therapeutics, is certainly of sufficient importance, if mentioned at all, to deserve more pages than it now covers. Notwithstanding the defects, which are chiefly those of omission, we think the book is one which may be recommended both to students and practitioners when in search of therapeutical knowledge. At the same time we believe that the arrangement of differential diagnosis is one which of necessity has to be so superficial as to permit of error in the hands of one whose information depended almost entirely upon this source. As one turns the pages he is struck by the great number of subjects which are noticed. Patent medicines find space for analyses of their contents, and very properly precede the portion of the work which discusses the treatment of poisoning. One advantage of the book is that it mentions drugs which are not officinal, but which are frequently used in medicine, at least in certain parts of the United States. In the appendix, a list of Latin words and phrases used in writing prescriptions is given, and a very good general index, not divided into the consideration of drugs and diseases, ends the volume.

The publishers have, however, increased the diameter of the work to a considerable extent by the addition of a goodly number of advertising pages, which to the book purchaser may be considered as an advantage or a disadvantage directly measurable by the capacity of his pocketbook.

A HANDBOOK OF OBSTETRICAL NURSING. By ANNA M. FULLERTON, M.D. 12mo., pp. 214. Philadelphia: P. Blakiston, Son & Co., 1890.

THIS little book is one of the best which has so far appeared upon the subject of obstetric nursing. Though not claiming originality, it shows an intimate acquaintance with the requirements of a nurse, and leaves no doubt in the mind of the reader that the author is experienced in the management of labor and the puerperal state. Careful and minute instructions are given for the preparation of the patient and her surroundings. The accidents which may happen in the absence of the physician are described, and the duties of the nurse in such emergencies are clearly explained.

Particularly detailed are the instructions upon the use and preparation of the various antiseptics used in obstetric practice, creolin apparently being the antiseptic preferred by the author. The various devices for the sterilization of milk, most of which are unnecessarily complicated, are also described at length. Altogether, the book is very satisfactory, and one that we can recommend both to the student of nursing and of obstetrics.

ELECTRICITY IN THE DISEASES OF WOMEN, WITH SPECIAL REFERENCE TO THE APPLICATION OF STRONG CURRENTS. By G. BETTON MASSEY, M.D. 12mo., pp. 210. Philadelphia and London: F. A. Davis, 1889.

AN inspection of this book will show that it is a notable production, not only as the first systematic exposition of a new and conservative method of treating many of the diseases of women, but also as the first book on medical electricity based on modern ideas of currents and employing the terms that belong essentially to the era of the dynamo and the electric light. This is shown by the absence of the obsolete theories and wearisome explanations that are usually found in electro-therapeutic works, the reader's attention being immediately directed to a consideration of the currents themselves as therapeutic entities rather than to the batteries that produce them, although enough space is given to apparatus and similar details to indicate the author's choice, and the proper method of handling them.

A special chapter is given to the physical characteristics of each current, illustrated by detailed experiments.

There certainly can be no better way of mastering the intricacies of volts, ohms, milliampères, than an actual performance of these experiments, preferably upon one's self, if possible, or even upon a subject.

Following this practical consideration of currents, and their management, which, indeed, is the most valuable

part of the book to the beginner, a chapter each is given to intra-uterine, galvano-chemical cauterization; electro-puncture; vaginal applications; and general percutaneous application. In each of these, explicit and exact directions are given.

The therapeutical portion is ushered in by Chapter XI., devoted to the electrical treatment of fibroid tumors of the uterus. This is, of course, an important feature of the work, and much space is given to detailed notes of cases rather than to the glittering generalities that some writers think sufficient to carry conviction. Here, as elsewhere, the author confines himself to his personal experience. The intra-uterine method is mainly relied upon, puncture being but seldom advised. An aseptic, pliant electrode capable of being insulated beyond the os, and the use of soaped absorbent cotton pads, instead of clay, for currents under 100 milliampères, are the main departures recommended from the oft-described method of Apostoli.

Chapter XVII. is a concise statement of the claims of electricity in the treatment of extra-uterine pregnancy. Fœticide by the faradic current is recommended in cases diagnosed before rupture, followed by the galvanic current for the promotion of absorption. Both currents are to be applied without puncture, the sac being merely included between an electrode in the vagina and one on the abdomen. Chapter XVIII. deals with the treatment of amenorrhœa and hydrosalpinx.

In the final chapters of the work devoted to the contra-indications and limitations to the use of strong currents, any attempts at electrical treatment are condemned in *cystic ovarian tumors* and in *papillomatous tumors* of the broad ligament, the author basing his opinion mainly both upon the history of published attempts and the want of a rational basis for such treatment. The opening paragraph of this chapter is worth quotation:

"The voice of authority cannot be too early raised against the indiscriminate and careless employment of the powerful agency treated of in these pages. It is in the nature of things that a power for good, when unharnessed, becomes an engine of evil in proportion to its potentiality; hence an operator who cannot bring a calm and unbiassed judgment as well as electrical knowledge and skill to this work had best leave it alone."

We have endeavored to present in condensed form Dr. Massey's views as expressed in his book. In our opinion electricity, in the treatment of certain diseases of women, has come to stay.

DU SANG ET DE SES ALTERATIONS ANATOMIQUES, PAR GEORGES HAYEM. 8vo., pp. 1023. Paris: G. Masson, 1889.

THIS book, written by one who has devoted a very large amount of time and study to the physiology and pathology of the blood, has been received, both in France and in this country, by those who are fortunate enough to read French, with a great deal of interest, and has already obtained for itself a large amount of praise from those who are best qualified to judge of its value. Dealing as it does in the most thorough manner with everything that can possibly appertain to the subject, and being illustrated by a very large number of colored drawings, it affords by far the best book of reference in the study of this, the most important tissue of our bodies.

During the past few years so much attention has been paid by clinicians and pathologists to the changes which take place in the blood of human beings suffering from various diseased conditions that Dr. Hayem has found, in addition to his own experience, a very large amount of interesting material which he has embodied in his book, leaving out, with unusually good foresight, all studies which have seemed in any way imperfect or unworthy of mention.

Unfortunately, books devoted to the study of comparatively limited portions of the body seldom possess a sufficient popularity to warrant their translation into the English language, but we think that in this instance the profession in America and England would find so much of practical utility in the book before us as to justify its translation. This is particularly the case owing to the fact that so great an amount of information is contained in its pages, the result being that physicians in all the branches of medicine would find matters of interest. The physiologist will find careful statements regarding the condition of the blood and the tests for the isolation of the various crystals and their bodies. The physician will find information as to the manner in which he is to seek for variations in the number of the various corpuscles and in the quantity of the hæmoglobin, while the pathologist will also obtain valuable additions to his knowledge in regard to the abnormal changes which may take place. Dr. Hayem's book is certainly the best one which has ever appeared upon this subject, and its reliability is attested by the well-known investigations and studies of its author heretofore given to the profession.

SAUNDERS'S QUESTION COMPENDS: ESSENTIALS OF OBSTETRICS ARRANGED IN THE FORM OF QUESTIONS AND ANSWERS. BY WILLIAM EASTERLY ASHTON, M.D. 12mo., pp. 220. Philadelphia: W. B. Saunders, 1890.

THIS book, which has already reached its fourth thousand, has been written by the Demonstrator of Clinical Obstetrics in Jefferson Medical College, and considering the fact that its size has, of necessity, to be a limited one, Dr. Ashton has certainly placed between its covers a large amount of information. While the use of questions and answers may not seem to the busy practitioner to be of any particular value, the experience of the medical student teaches him that this arrangement is one which is the most apt to impress upon his memory the important points for the examination room and for his early practice. Dr. Ashton's book certainly has proved of sufficient value to make for itself a large sale within a short time, and we think that those students who, by reason of the limited development of their cortex, are forced to buy this variety of literature will find the book one of the best that can be obtained.

PHYSICIANS' LEISURE LIBRARY: DIABETES. By A. H. SMITH, M.D. 12mo., pp. 74. Detroit: George S. Davis, 1889.

THIS little book contains within a short space a fairly good *résumé* of the important subject of which it treats, and a very large portion of it is very properly devoted to the prevention and treatment of this troublesome dis-

ease. It is stated in the preface that a large amount of the information which it contains has been obtained from the articles of Dr. Tyson in Pepper's *System of Medicine*, and in the *Annual of the Universal Medical Sciences* for 1888 and 1889.

The advantage of combining a large amount of information in a small space has been recognized to such a degree that the physician in a comparatively short time may obtain a very good idea of the condition with which the book deals without an undue amount of mental effort.

THE CURE OF CROOKED AND OTHERWISE DEFORMED NOSES. By JOHN B. ROBERTS, A.M., M.D. 12mo., pp. 24. Philadelphia: P. Blakiston, Son & Co.

THE author of this little brochure of twenty-four pages frankly states, in his introductory remarks, that the performance of the operations described may be "a source of revenue to the operator." This being often a very important branch of medical science, the volume will, doubtless, have many readers. As the subject-matter compares very favorably with chapters on this topic in standard surgical text-books, it will probably be welcomed by the general surgeon. The teachings of rhinological specialists are, however, much more moderate: the extreme measures advocated by Dr. Roberts having been almost wholly abandoned by them some years ago.

TEXT-BOOK OF MEDICAL CHEMISTRY. By ELIAS H. BARTLEY, B.S., M.D. Second edition, revised and enlarged. 12mo., pp. 423. Philadelphia: P. Blakiston, Son & Co., 1890.

THIS book presents in a convenient and readily accessible form, much of the chemical knowledge required by physician and pharmacist. Part I. is devoted to elementary physics, and contains an excellent and instructive section upon the theory and nomenclature of electricity, concerning which, it is to be feared, most physicians have had but imperfect instruction. Theoretical chemistry, so appalling with its complex formulæ to the student at the beginning of his studies, is simply yet thoroughly explained in Part II. In Parts III. and IV., inorganic and organic chemistry are treated of in a somewhat conventional manner, with here and there detailed considerations of elements and compounds of direct interest to the physician. For example, under the head of hydrogen and oxygen, the methods of water analysis and various tests for impurities are described, as well as the composition of many of the mineral waters.

The section on poisons is the least satisfactory of any, as some of the antidotes mentioned are not antidotal to the poisons for which they are advised. Alkaline carbonates, baking soda, and soap, recommended here in cases of oxalic acid poisoning, should not be used, as the oxalates of sodium and of potassium are themselves toxic. In the treatment of carbolic acid poisoning, oil, emetics, and the stomach-pump are advised, no mention being made of the soluble sulphates, the true antidotes to this acid. Moreover, emetics will seldom, if ever, act, owing to the complete anæsthetization of the sensory nerves of the stomach. With these rather unfortunate exceptions, the volume is an excellent text-book, and one for which there is doubtless a place.

SOCIETY PROCEEDINGS.

NEW YORK ACADEMY OF MEDICINE.

Section on Surgery.

ROBERT ABBE, M.D., IN THE CHAIR.

Stated Meeting, February 10, 1890.

The meeting was devoted to a discussion of the subject of the treatment of fracture of the patella, and interesting cases illustrating the good results obtained by the operative method were presented by Drs. Abbe, Fluhrer, and Willy Meyer.

DR. W. T. BULL read a paper on the

RESULTS OF THE TREATMENT OF FRACTURED PATELLA WITHOUT OPERATION,

and illustrated his paper by presenting a number of cases which had been treated in this manner. Many of them had received their fractures eight or ten years before, and although representing active occupations, such as firemen, policemen, and truck-drivers, they were able to attend to their duties very well.

Dr. Bull said that before the times of antiseptic surgery bony union was so rare that surgeons usually contented themselves in endeavoring to obtain short ligamentous union; but with the advent of modern methods bony union was eagerly sought after. Much was expected from these new methods, but they were soon found to be dangerous, and rapidly fell into disfavor.

His paper was based upon the histories of twenty-two cases of fractured patella which had been treated without operation, and had been followed for periods varying from one year and nine months to thirteen years after the injury. There were sixteen cases of primary fracture and six of refracture; but as the latter class cannot be expected to yield such good functional results as the former, they were not considered. The results of treatment were classified under three heads, viz.: (1) Functionally perfect—ten cases, in which flexion and extension of the limb have been complete and strong, the ligament firm, and little or no atrophy of thigh; (2) good—four cases, in which flexion and extension were imperfect, but the joint was sufficiently useful to satisfy the demands of the patient's occupation, and only showing weakness after unusual exertion; and (3) bad—two cases, in which there was no power of extension, and the patients were compelled to wear supports, or to walk with a cane. Three-fourths of these patients were between the ages of twenty and forty years, and their occupations were sufficiently laborious to test the efficacy of the treatment. Bony union was obtained in one instance, and it is noted in two others that there was no appreciable separation of the fragments; while in the remaining cases the average length of the ligament was nine-tenths of an inch. This corresponds very well with the statement usually made that the length of a useful ligament varies between one-half inch and one inch. In one case the ligament was observed to shorten during a period of some years, owing to the formation of bone in the ligament.

Out of six cases of refracture, three occurred within two months after being discharged from the hospital, and in one case the lower fragment was fractured while the ligamentous union remained intact. The results in two

cases out of this series were surprisingly good, and in the remaining four there was deficient extension, three having long ligaments.

Neither the age of the patient nor the character of the injury seemed to influence the result. From the first series good results were obtained in eight out of ten cases by the use of simple retentive apparatus, provided no accident endangered the newly formed ligament. As refractures were considered accidents, they should be included with those giving a less favorable although still a very good percentage—seventy-three per cent.

If the cases were seen soon after the injury the knee was slightly elevated, equable pressure was made by means of cotton compresses and snug bandaging, and, after an average period of five days, the limb was elevated and a gypsum bandage applied, the fragments being approximated by loops of plaster. It is possible, by proper application of a figure-of-eight bandage, not only to tilt the fragments but to separate their margins. After the effusion has subsided, there is no tendency to drawing up of the fragments. After the gypsum bandage has "set," the patient is allowed to sit up. Six or eight weeks later this bandage is removed and a posterior splint, or the posterior half of the gypsum dressing, is bandaged to the limb during the day. At this period vigorous shampooing and the use of electricity should be begun. About the third month extension is usually good, although flexion is only possible to about forty-five degrees. The patient may now be allowed a cane, but the use of knee-caps should be discouraged, and passive motion is rarely advised. The patient is to make daily efforts to bend the knee slightly, the foot being upon the floor. There is no liability to accident by this method.

Many surgeons are still opposed to the use of plaster-of-Paris, thinking that it causes atrophy and interferes seriously with the circulation; but the use of plaster is not recommended by Dr. Bull until the swelling has subsided, and cotton is always applied underneath.

It will be seen that the total time of treatment is about six months; but the patient is confined during six weeks and allowed only moderate movement for six weeks more. The time of treatment cannot be advantageously shortened. If the ligament and joint functions begin to weaken, it is advisable to resort to wiring the bone, and the operation is easier at this time than subsequently when the fragments are more widely separated. Cases of refracture should be treated upon the expectant plan until it is apparent what the results will be.

Malgaigne's hooks have been employed both with and without antiseptic methods, and Treves speaks favorably of them; but it does not seem that there is anything gained by their use. All such measures aim to secure bony union, but they are both risky and meddlesome.

In the discussion that followed, DR. L. A. STIMSON said that refracture was common after all methods of treatment, and we were not justified in claiming bony union for any case unless an ocular demonstration of its existence by a section through the parts had been made. The most we could claim is an absence of independent mobility. In an extensive review of the literature of the subject, he had been impressed with the widespread opposition to arthrotomy and metallic suture. During the past fourteen months he had treated twenty-four cases by a new method of subcutaneous suture, which had been suggested to him by his house-surgeon, Dr. Clark. The operation had generally been performed under cocaine anæsthesia, the cocaine being introduced at four points, two above and two below the fracture and a little to one side of the median line. Incisions half an inch long were made at these four points, and a stout silk suture introduced with a large half-curved Hagedorn needle. The ligature was first passed through the ligamentum patellæ, reëntered again at the point of exit and passed upward in front of the fragment and brought out at the upper opening on the same side. It is again reëntered and passed close to the patella, catching the substance of the quadriceps; and in the same manner carried back to the starting-point. By means of tenacula in the quadriceps and patellar tendons, the fragments are approximated and held firmly until the suture is drawn tight, tied, and the ends cut off. As the punctures permit an escape of blood from the fracture, and open a communication with the joint, the operation is not entirely devoid of risk; but so far there has been no suppuration within the joint. An antiseptic dressing is applied, and the limb placed on a posterior splint for one week, when the incisions are found healed. Plaster-of-Paris can then be substituted and allowed to remain on for one month. When a second plaster splint is required, it will only be necessary to wear it during the daytime. The results so far have not been very favorable, but there are reasons for believing that these can be much improved.

DR. CHARLES MCBURNEY had always been opposed to operations for fractured patella except when the fracture was compound, as he considered it quite dangerous, and the functional results obtained by the non-operative method were too good to justify the taking of such risks. He had been able to secure excellent approximation by means of plaster extending over the quadriceps tendon and down the leg, and covered with plaster-of-Paris. An opening in the plaster-of-Paris, and a proper arrangement of buckles, enable the surgeon to secure a progressive approximation of the fragments. In this manner, he had seen a gap of one and a half inches reduced to one-quarter of an inch in ten days.

DR. CHARLES PHELPS had frequently made use of the open method of operation and did not fear the results.

DR. WILLIAM T. FLUHRER'S practice was to operate upon recent fractures of the patella, as it assisted an accurate diagnosis, and secured the quickest and fullest functional results, at the same time exposing the patient less to the danger of refracture. The infolded soft parts often interfered greatly with securing proper results, and he had been led to introduce a needle subcutaneously to push aside these tissues so as to free the fragments and obtain bony crepitus. There had been no accident in his operative cases, some of which were presented to the Section, and confirmed the statement concerning the good results to be obtained by this method.

In view of the strong opinions expressed by some against the operative method, and the excellent results exhibited by those who advocated operative procedures, Dr. Abbe said he thought that we should conclude that the operation and not the method had failed.

DR. BULL, in closing the discussion, said that while appreciating the brilliant results obtained by operations, and in spite of their excellence and rapidity, he considered the methods too dangerous for general endorsement.

He had tried various devices which were attached to the skin for the purpose of securing better approximation of the fragments, but they had failed of their object,

NEW INVENTIONS.

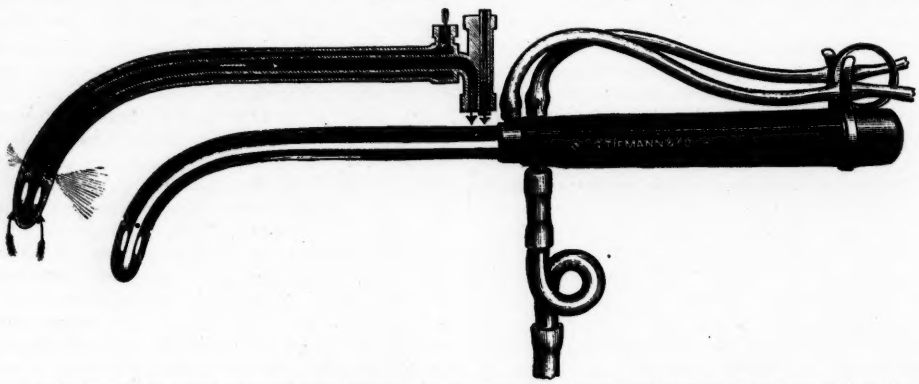
A SELF-EXHAUSTING IRRIGATING CATHETER.[1]

BY NATHAN G. BOZEMAN, PH.B., M.D.,
GYNECOLOGIST TO ST. FRANCIS'S HOSPITAL, JERSEY CITY; MEMBER OF THE NEW YORK COUNTY MEDICAL SOCIETY, ETC.

THE double-current catheter, or irrigating tube, which I have been using for some time, was originally devised by me for treating chronic cystitis in women after a fistulous opening had been made in the bladder, for free drainage and physiological rest of that organ. As the assistant of my father, Dr. Nathan Bozeman, I have carried out this treatment under his directions in a great many of his patients, hence the excellent opportunity for perfecting the instrument. By its use medicated fluids can be sprayed against the distended walls of the bladder in very fine jets, and be quickly removed, together with the urine, as fast as it accumulates in the most dependent portions of its cavity. The patient being in the supported knee-elbow position, or on the side, douching of the organ can thus be accomplished without wetting the clothing or causing vesical tenesmus.

The instrument consists of an outflow tube and supply tubes, which are made of silver or hard rubber, and a handle for convenience of manipulation. The four supply tubes, each having a calibre of one-sixteenth of an inch, are attached along the sides of the outflow tube. They are provided with small lateral openings near their closed extremities. The outflow tube has a calibre of three-sixteenths of an inch, it is conveniently curved, and at the junction with the handle it is bent downward at right angles. There are also lateral openings near its closed end. United to the short portion of the outflow tube, which is bent downward, and parallel to it, is a tube having a calibre of one-thirty-second of an inch, it projects upward sufficiently to form a connection for a soft-rubber tube. Suspended from the open end of the outflow tube and the lower end of the short vertical tube, is a series of small coils of glass tubing, united one above the other by soft rubber tubing, and from the lowest one hangs a long rubber tube. The handle is rounded, and is four inches long, and at its extremity it is provided with a ring and steel clamps for compressing two soft-rubber tubes.

When I use the instrument for washing out the bladder, the curved extremity is passed into its cavity through the fistulous opening in the vesico-vaginal septum, the patient being in the supported knee-elbow position, with the perineum elevated by a perineal retractor. In this position, and under these conditions, the bladder is usually distended, and the extremity of the catheter can be moved about in its interior, barely touching its walls. Now the irrigating fluid is allowed to flow into the instrument by freeing the two rubber tubes from the clamps which compress them. A very small portion of fluid passes directly into the coils of glass tubing, collecting in them and partially filling them, when it is precipitated *en masse* downward, carrying air with it, which is exhausted from the outflow tube. And the fluid which collects in the fundus of the bladder, after having been sprayed against its walls through the small openings near the extremity of each of the supply tubes of the catheter, is steadily drawn up and evacuated.



Self-exhausting irrigating catheter, drawn one-half size, also a median longitudinal section of the same, without the handle. The arrows indicate the directions of the currents.

I find for irrigating the bladder that two glass coils and a rubber tube suspended from them, twelve inches long, produce sufficient exhaustion. A continuous return current through the outflow tube of the instrument is thus kept up, and all the fluid, after lavage of the bladder, is emptied automatically in a vessel placed on the table between the knees of the patient

The deep grooves along the catheter were intended to serve as tubes when the mucous membrane comes in contact with them, in the expectation that through them air would be drawn into the instrument, thus preventing the sucking in of the mucous membrane, and the occlusion at times of the openings in the outflow tube. This often did occur, so I have been compelled to cut off one of the supply tubes and establish a permanent communication with the air, through it, with the inside of the outflow tube on a level with its lateral openings. Any possibility of suction on the mucous membrane is thus prevented.

[1] Presented at the meeting of the Alumni Association of the Woman's Hospital, February 27, 1889.

The employment of continuous suction in a very simple and efficient way in the application of this catheter, makes it different from any of the double-current catheters that I have seen. Besides the use for which I devised this instrument, I have employed it with great satisfaction for irrigating deep sinuses and pus cavities. During the operation for closure of urinary fistula, in the supported knee-chest position, it is invaluable for keeping the cavity of the bladder and the wound free from urine and blood.

9 WEST THIRTY-FIRST STREET, NEW YORK CITY.

CORRESPONDENCE.

ST. LOUIS.

To the Editor of THE MEDICAL NEWS,

SIR: Our Health Commissioner has just issued the usual annual summary of mortality statistics for the last year, from which it appears that the total number of deaths in St. Louis during 1889 was 8004, being 1011 less than in 1888, and 1151 less than in 1887. The annual death-rate per 1000 during the year in a population estimated at 450,000 was 17.78.

Of the total deaths, 2047 were infants under one year, and 3149 were children under five years; 4383 were males, and 3621 were females. There were 63 deaths from measles, 114 from scarlatina, 346 from diphtheria, and 93 from croup; 146 from typhoid fever, 223 from malarial fever, and 367 from diarrhœal diseases in children under five years of age. The total deaths from zymotic diseases were 1773. There were 655 deaths from consumption, 598 from pneumonia, 337 from bronchitis, 408 from convulsions, 255 from Bright's disease and nephritis.

The number of births reported during the year was 11,906, of which 11,390 were white, and 516 colored; 6088 males, and 5818 females.

The epidemic influenza did not pass by St. Louis altogether, but the visitation was very light as compared with that in several of the Eastern cities, and there were no special features that require mention.

In the St. Louis Medical Society a periodical source of contention has been the question, How and by whom shall the proceedings of the Society be published? For years the *St. Louis Medical and Surgical Journal* published them without competition. Later the *Weekly Medical Review* entered the field, and, as a weekly journal, secured the right to publish them, as offering more favorable facilities than a monthly journal well could. Later there was a disagreement between the publishers of both these journals and the Society, and the old *Courier of Medicine* published the transactions for a year. At the commencement of this year the war broke out again. Proposals from different medical journals were received by the committee and presented to the Society, and it was seen that the proposition of the revived *Courier of Medicine* was in some respects more liberal than that of the *Weekly Medical Review*, although the latter had the manifest advantage, for a society holding weekly meetings, of giving opportunity for more prompt publication of papers and discussions. When the vote was taken, the result was declared to favor the *Weekly Medical Review* by a vote of eight to seven, its editor having voted for his own journal, while the editor of the other journal had refrained from voting at all. At the next meeting evidence was given of active "wire-pulling" by the editor of the *Courier*, for the action of the preceding week was then reconsidered, and by a vote of twenty-nine to nine the publication was awarded to the *Courier*.

Two or three volumes have been published here recently which I may mention as of some interest to the profession. The first is entitled, *Directory of Physicians, Dentists, and Druggists of Missouri, 1889*. So far as the *Directory* itself is concerned I have no special criticism to offer, but in the advertising pages the publishers have directly and grossly insulted the reputable medical schools which patronized them, and the members of the profession who subscribed for the book, by introducing several disgraceful advertisements of quack remedies: such as "—— Cancer Hospital Great Infallible Indian Cancer Plaster; the only institution in the world where cancers and malignant tumors are permanently removed without using the knife, ligatures, or caustics," etc. Another "ad." is that of "Mrs. Dr. ——, the Female Specialist," who sets forth that she has "a lying-in hospital for female complaints." Another female practitioner advertises a variety of treatments, and, among other specialties, announces that "magnetism is the supreme feature of my baths; hence patients have choice of male or female assistants." Another practitioner announces that he can be consulted as an allopathic physician, but prefers under all circumstances to treat all diseases of either sex, and of any age, by the new medical system called "Dosimetry," etc.

But to turn to a more pleasant subject, I have just received a copy of Dr. W. A. Hardaway's *Manual of Skin Diseases*, a volume of some 400 pages, which not only does credit to Dr. Hardaway's ability to describe clearly and concisely the various diseases affecting the cutaneous surface, but gives the treatment which he has personally found to be most successful in these diseases. Dr. Hardaway's numerous friends will be glad to see this demonstration of his complete restoration to health after having suffered for a time from nervous prostration superinduced by overwork. I am happy to be able to state that there is no foundation for the story which was circulated some time ago, that he had lost his eyesight, further than that he dropped and broke a pair of eyeglasses which he had worn for some years.

Dr. D. C. Gamble, who has been connected with the Faculty of the Beaumont Medical College since its organization, as Professor of Otology, has tendered his resignation, to take effect at the end of the present term. It is probable that the chair which he has held will be combined with that of Ophthalmology, now ably filled by Dr. A. Alt.

VIENNA.

To the Editor of THE MEDICAL NEWS,

SIR: At last we have heard the results of the bacteriological studies of influenza. Dr. Weichselbaum, Professor of Bacteriology at the Vienna University, and the discoverer of the coccus of pneumonia, has reported his work at a meeting of the faculty. He made a careful study of the sputum, nasal secretion, and blood of twenty-one cases, and in all of them the utmost precautions were used to get pure materials for examination.

Not only were microscopic examinations made, but in every case experiments upon animals were made with pure cultures; so that the utmost scientific care was exercised. He found in all the material examined large numbers of the diplococcus pneumonia, and in the pure cultures his results were verified, for the bacterium found could be distinguished in no way from the diplococcus. It had the same light-colored capsule and the characteristic appearance, and in pure cultures on agar and on gelatin the colonies were exactly the same. In his experiments in inoculating the smaller animals the results were the same as after inoculations of the diplococcus pneumonia. In a few cases streptococci were also found, but in small quantities. In his *résumé* Weichselbaum concludes that, in regard to the etiology of influenza, there are two possibilities; either the pneumonia coccus is the cause of the disease, or else it is caused by an unknown microörganism the action of which brings about conditions that make an excellent soil for the diplococcus, and diplococci very early entirely supplant the primary micrococci. The clinical history gives many points in favor of the first theory; the sudden chills and the rapid course and the great variety of air-passage complications. But we cannot explain the great differences between influenza and pneumonia if the same germ is the cause of both, unless we assume that the coccus has been so varied by unknown meteorological circumstances as to cause marked differences in its action on the human organism. The second theory—namely, that the diplococcus is merely a secondary infection, has many analogies, especially in the etiology of the exanthemata, and is the theory to which Weichselbaum himself inclines. The pneumococcus has often been found in healthy sputum, and grows exceedingly well on inflamed mucous membranes. It has great vitality, and probably the unknown influenza coccus has not. And thus the question stands. There have been many investigations throughout Europe on this point, but nowhere have more definite results been reached.

NEW YORK.

To the Editor of THE MEDICAL NEWS,

SIR: The proof of the old-time proverb, "It is an ill wind that blows nobody good," has been again exemplified in the history of the recent fire at the Presbyterian Hospital, and although that calamity was mercifully exempt from the usual horrors attendant upon a fire in a hospital, it has not been allowed to pass without impressing a useful and much-needed lesson upon the community. Among the first to heed the note of warning were the Commissioners of Charities and Correction, who ordered a general inspection of all the institutions under their care with especial reference to the provisions against fire. I say a much-needed lesson, for, outside of this department are to be found hospitals well appointed and well managed in most respects, which are still very deficient in their arrangement regarding fire. It is true that some of them have instituted regular fire-drills for the purpose of familiarizing those in charge, with the best line of action to be pursued in such an emergency; but the practical difficulties in the way of carrying out the exercises efficiently in a house filled with the sick and helpless are so great as almost to neutralize the good derived from such a system. The real danger, in some instances, lies in the faulty construction of the buildings, and not in the want of provision for extinguishing fires. Of what avail is it to have the most modern fire apparatus, ready for action at a moment's notice, and a corps of trained attendants capable of using it efficiently, if connecting corridors, elevator shafts, and sometimes a central chapel, acting like immense chimneys, assist the spread of the flames and convert the building into a veritable death-trap? A few hospitals have beds surrounded by curtains which are a constant menace, and I have often trembled at night when the orderlies were going from bed to bed, examining surgical patients by the light of a flickering candle, as I thought how easily a sudden gust of air might start a conflagration. I would not be understood as opposed to some contrivance for the privacy of the patients; but why use curtains, which not only increase the risk of fire, but furnish admirable lodging places for disease germs? It would not be difficult to secure privacy to the patient and avoid these undesirable features, by substituting for the curtains light wicker screens, such as are used about the beds in some of the London hospitals.

Dr. Frank Ferguson, who has just been appointed Professor of Pathology in the New York Post-Graduate Medical School, entertained the Clinical Society connected with that school, by a paper on the "Plasmodium Malariæ and its relations to the Malarial Fevers." This difficult subject, with which even a number of our active workers in pathology are but little acquainted, was made doubly interesting by the fact that the paper was based upon actual researches which had been carried on for some years by Professor Ferguson. He said that the clinical symptoms of malaria had been produced in animals by germs which had been isolated and cultivated, and that these germs had been afterward found in the bodies of the animals. Similar germs isolated from the marshes of malarial districts had been found to produce a like train of symptoms, and the pathological lesions characteristic of malaria had been observed after death; but strangely enough, the bodies which had been introduced were not found. It had occurred to him that it was possible that these germs had taken up the coloring matter of the blood and had become deeply stained by it; and he thought it possible in this way the changes which had been studied under the name of the plasmodium malariæ had been produced. His experiments made him feel positive that he could reproduce in animals at any time these changes in the protoplasm of the blood-cells.

Dr. J. M. Byron, of the Loomis Laboratory, in discussing the paper, said that while studying the blood in other diseased conditions, and noting the effects of various reagents, he had been struck by the similarity between the changes so produced and the so-called plasmodium malariæ of Laveran. Other pathologists had had a similar experience, and he was by no means convinced of the pathognomonic and bacteriological standing of this plasmodium. It has no definite form, and most of its forms and relations can be explained by contraction and change of the protoplasm of the red corpuscles of the blood—changes which are produced probably by an unknown bacterium.

The same gentleman told me that although attempts

have been made at the Loomis Laboratory by himself and others to hunt down the "influenza bacillus" of Seifert, and ascertain its relations to "la grippe," their work had been interrupted by the rapid subsidence of the epidemic, and they had been unable to arrive at any conclusions of practical importance.

INDIAN MEDICINE.

To the Editor of THE MEDICAL NEWS,

SIR: A paragraph in THE MEDICAL NEWS of January 18th reports Major Powell, of the U. S. Geological Survey, as saying that "To the Indian mind there is no medicine except sorcery."

If I understand this assertion correctly, it contains either more or less than the whole truth. I do not contend, however, that the use of "drugs" by savages is often, if at all, dictated by knowledge of their therapeutic effect, if they have any. But after their own fashion, they use many articles gathered from forest and plains.

If we take the Sioux or Dakota tribe for an example, we find that their name for doctor means "herb-root man." They sometimes apply to him also the name of "spirit man," as with them, if not with all savage tribes, the offices of doctor and priest are united in the same individual. Their pathology is spiritual, and the doctor must deal with spirits; but in doing so he finds roots and herbs scarcely less important as means than his rattle and his vocal chants. Many of the herbs used by him are well known to all who live in his region, but he generally manages to have some which he assumes to be known only to himself and the gods, and which are guarded with an air of secret wisdom.

A physician who labored among the Dakotas in Minnesota as far back as 1836, reported their medicine men as using a local species of euphorbium, with violent purgative effect, and as dressing external injuries with the inner bark of the pine. Also as using the American milk-weed, and quite a variety of roots and herbs and barks in no very intelligible manner—which we can readily believe.

I saw an Indian use dry earth as a dressing for gangrene. This, with the pine bark as a local dressing, points to something approaching rational surgery. It was also the common report amongst white "squaw men" and "half-breeds" that the old midwives possessed an herb or root which produced abortion, and which they sometimes brought into requisition for jealous wives who wished to "spite" their husbands for bringing into the wigwam a younger and fairer bride. Of this means of punishment I have no practical knowledge, though I have had to do with cases where the hunting-knife and the strychnine-bottle were resorted to as a more direct means of vengeance.

In 1869, being full of the missionary spirit, I was sent by the Commissioner of Indian Affairs as physician to one of the new agencies established in Central Dakota under the Sherman Commission, and continued in that capacity until the spring of 1876—long after the missionary spirit had left me.

These Indians were fresh from the plains and in constant intercourse and fellowship with those who still remained obdurate under Sitting Bull, Red Cloud, and lesser lights, and I had thus a chance to study the Indian in all his native wildness and ferocity. Possessing a soul superior to professional jealousy, I often shared the same patient with the native practitioner, who did not always receive my visits with that air of cordial generosity which should characterize so noble a calling. As often as otherwise I found my carefully compounded prescriptions hung upon the "medicine pole" outside the teepee, but I never showed any resentment on that account. I still loved good Indians, and it only required the shooting of three or four of my civilized companions within sight of the agency to convince me that none were good but those who occupied the scaffolds of the dead. I was correct in the main, but there was an occasional rare exception, of whom I love to think, now that they are dead also. The superstition which fills the savage mind concerning priests and doctors doubtless saved me from being shot down in my wanderings in search of the good that I might do.

Every family had its "medicine-bag" hung on a pole outside the teepee, but in spite of this the evil spirits would slip in now and then. If the patient was very ill, the teepee was abandoned to the sufferers and the doctors, the family taking refuge elsewhere. The use of the rattle was only limited by the endurance of the medicine man. His hideous vocal accompaniment was limited by the endurance of the larynx. When exhausted with these efforts the doctor would grab his gun with the air of a man who was struck with a new idea, and run out and fire at the spirits. Then while gaining further strength, he would burn aromatic herbs upon the coals in the fireplace, until the teepee was odorous with more pleasant things than usually greeted the civilized nose in an Indian habitation. He would also make decoctions and warm infusions, some of which he would cause the patient to sip, but the major part went into his own mouth, and was thence spurted over the body of the patient.

If there was severe local pain, the doctor would suck the part, first concealing some strange object in his mouth, which in the end he would exhibit as the offending evil which he had sucked out, when, if the patient was endowed with proper faith, the pain would cease. Another feature of the trick was to spit blood which was supposed to have come out with the offending object, but which he drew from his own gums by irritating them with the foreign body.

As a case in point, I was attending a young woman suffering with acute articular rheumatism. I arrived at the teepee one day to find the medicine man sucking at her knee. In due time he raised his head suddenly and drew his hand with a quick motion over the knee, when something struck the opposite side of the teepee and fell to the ground. With an air of profound gravity he walked over, picked it up, and exhibited to the patient an eagle's claw, wet with saliva, and assured her that that had been causing her pain, and that he had sucked it out. I looked duly surprised, gave the patient a full dose of opium, and agreed that she would feel easier.

So we see that the Indian uses "medicine" for irrigation, for fumigation, and for imbibition; and that he is also a masseur and faith-healer.

In surgery, as we have already seen, he uses barks, roots, leaves, herbs, and dry earth for dressings. He also constructs good splints from small, flexible willows,

which accommodate themselves to the shape of the limb, and by numbers supply the needed strength. But in the treatment of fractured clavicle he is a failure, judged by the results I have seen.

They employed one means of treatment which I sometimes utilized. That was the hot-vapor bath. Their mode of using it was to construct a small "wicking-up" of willows, large enough to sit under, which they covered with robes or blankets. Large stones, well heated, were placed in the centre. Stripped and crouching about these stones, the patient poured water upon them, and in the heated vapor thus produced would sweat very freely. This device was in use by the Dakotas early in the century, and how much earlier is not known.

One old doctor assumed an air of fraternity toward me, and would come into my office with a look and a greeting which said plainly, "we know how to fix 'em." He observed quite early in our professional acquaintance that when the bowels were torpid, the medicine which I gave made them act; and that if there was too much action, my medicine stopped it. The fact took great hold upon him, and he came to me regularly for supplies of this medicine. I gave the pills in bottles which he readily distinguished, and the doses also were readily remembered. He also drew regularly supplies of camphor, but all that I could learn from him of its use was that he "made medicine" with it. He probably fumigated the teepees of the sick with it, and was thereby enabled to produce an odor which no other "medicine man" could produce.

He also wanted chloroform, but for obvious reasons I refused the request and assured him that it was "good medicine" for white men only. The virtue of the Sioux women in the wild state was superior to "the world, the flesh, and the devil." Applications were not very infrequent from enamored "warriors" for the medicine which, held to the nose, "made people sleep so that an arm could be cut off without awakening the sleeper." Many did not hesitate to say that they wanted to put it to the nose of the object of their adoration, so that they might accomplish what was otherwise a hopeless undertaking.

S. S. TURNER, M.D.,
A. A. Surgeon U. S A.

CAMP SHERIDAN, WYOMING,
February 4, 1890

NEWS ITEMS.

Cholera in Persia Apparently Abating.—From recent reports, through Russian channels, it seems probable that the cholera epidemic of central Asia is abating. In Persia the march of the disease has been checked by quarantines between the cities and the mortality in several of the infected towns is lower. In regard to Mesopotamia, also, favorable reports have been issued by the Turkish Sanitary Board; a report dated in January, goes so far as to say, "Mesopotamia is now free from cholera."

A Philadelphia Physician in Africa.—Dr. W. L. Abbot, of Philadelphia, has recently arrived at Zanzibar, from the interior of East Africa, where he has been engaged in making explorations and scientific collections, some of which are for the Smithsonian cabinets. Some of his expeditions into the Kilimanjaro table-lands were made in company with Mr. Thomas Stevens, the commissioner of the *World* to discover Stanley; and as a consequence, Dr. Abbot's experiences have been pretty fully described. One of the troubles that he and other explorers met with in Africa is leg-ulcer, which is largely in excess of any other disease. Dr. Abbot, writes a correspondent, "had his clinic, before breakfast, nearly every morning, and it seemed as if nine-tenths of his cases were leg-ulcers." Dr. Abbot was graduated from the University of Pennsylvania, in 1884.

The Diagnosis of Hydrophobia.—Dr. Gibier, of the Pasteurian Institute, in New York City, has received many letters of inquiry as to the diagnosis of rabies in dogs which have bitten human beings, and thereupon killed. In such cases, he requests that some part of the brain of the animal be put in glycerin, with as little delay as possible, and be sent to him. When this is done, but not otherwise, a satisfactory conclusion can be reached.

The Sale of Antipyrine Officially Restricted in Vienna.—The *British and Colonial Druggist* states that no less than seventeen deaths from overdoses of antipyrine occurred during a fortnight in Vienna. This was during the prevalence of *la grippe*, when the sale of the drug was enormous; and until recently it could be bought freely by the laity. Since then, and partly in consequence of those fatalities, the sale of antipyrine has been forbidden except upon the prescription of a physician.

The Oldest Living Graduate of the University of Pennsylvania.—Concerning the question of the oldest living graduate of the University of Pennsylvania, a correspondent calls attention to the fact that Dr. James Kitchen, of Philadelphia, was graduated from that institution in 1822, at the age of twenty-two years. He is now ninety years of age, and has been engaged in the practice of medicine for sixty-eight years.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MARCH 11 TO MARCH 17, 1890.

DAVIS, W. B., *Captain and Assistant Surgeon.*—The leave of absence for seven days, granted by Orders No. 9, Fort Preble, Maine, March 7, 1890, is hereby extended ten days.—Par. 6, *S. O. 58, Division of the Atlantic*, March 12, 1890.

By direction of the Secretary of War, RUDOLPH G. EBERT, *Captain and Assistant Surgeon*, now on sick leave of absence, is relieved from his present station, Fort Pembina, North Dakota, and will report in person to the commanding officer Angel Island, California, for duty at that station.—Par. 1, *S. O. 57, A. G. O.*, March 10, 1890.

By direction of the Secretary of War, JUNIUS L. POWELL, *Captain and Assistant Surgeon*, is relieved from duty at Fort Supply, Indian Territory, to take effect at the expiration of his present leave of absence, and will report in person to the commanding officer Fort Randall, South Dakota, for duty at that post, and by letter to the commanding general Department of Dakota.—Par. 8, *S. O. 56, A. G. O.*, March 8, 1890.

THE MEDICAL NEWS *will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.*

Local papers containing reports or news items should be marked.

Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

All communications relating to the editorial department of the NEWS *should be addressed to No. 1004 Walnut Street, Philadelphia.*